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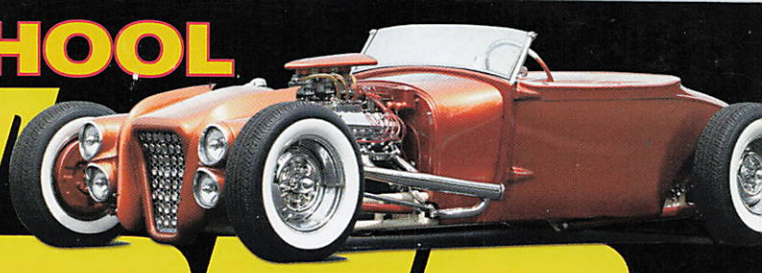

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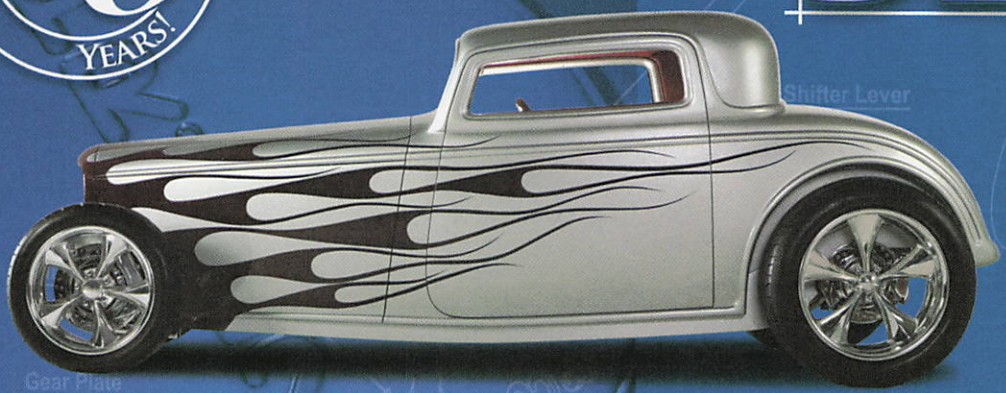

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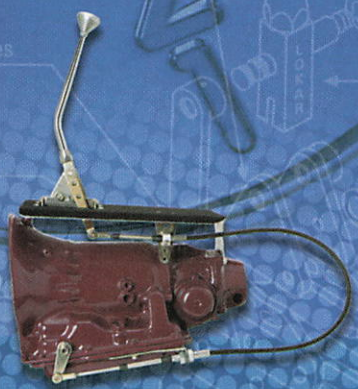

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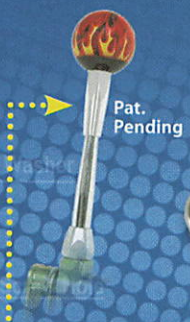

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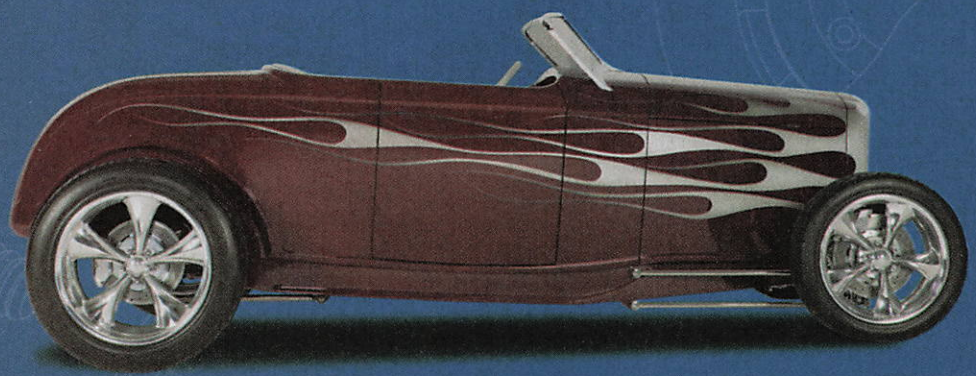

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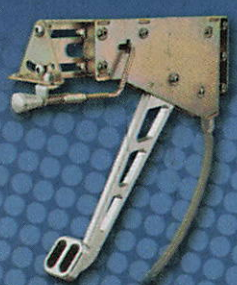

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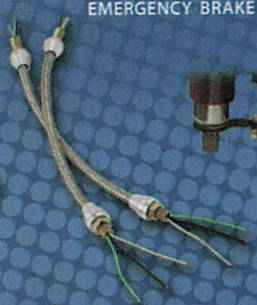

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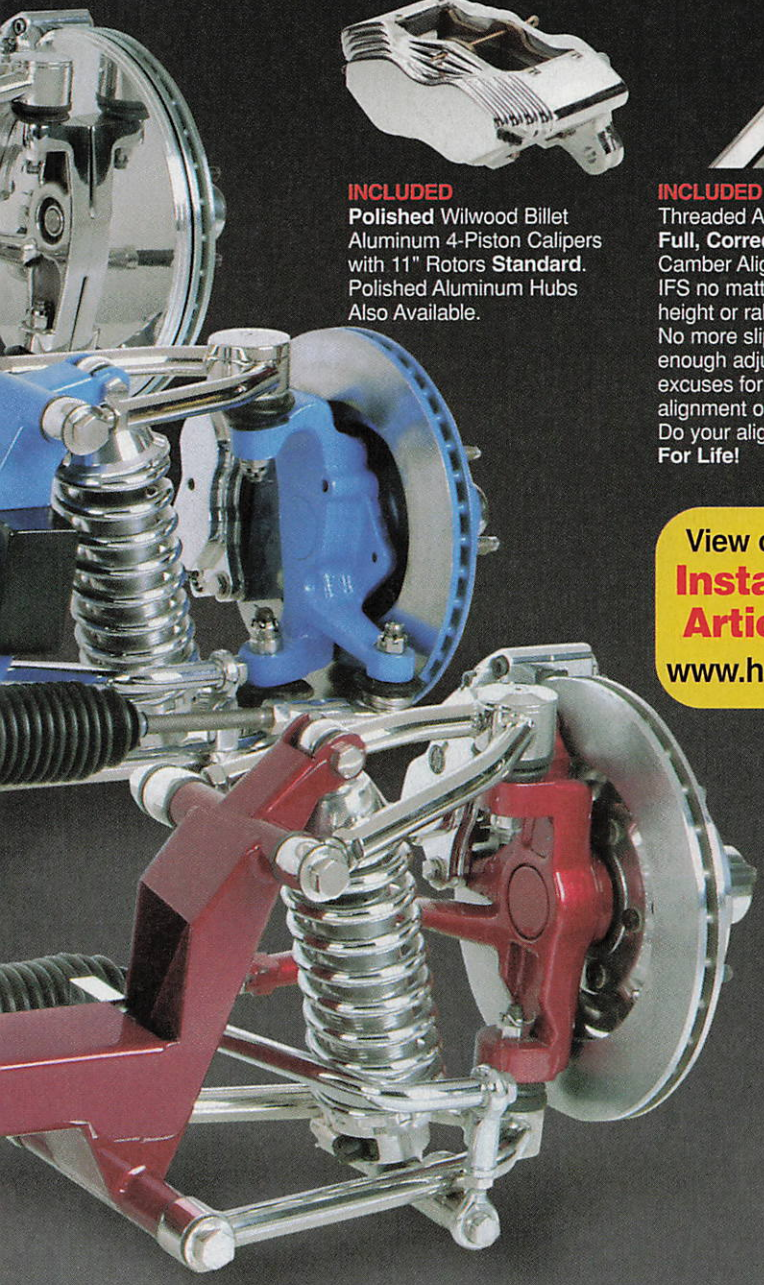

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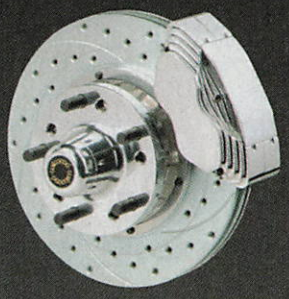

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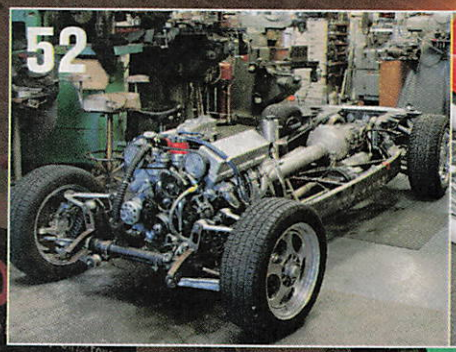

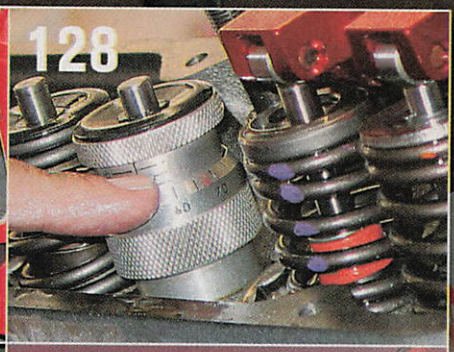

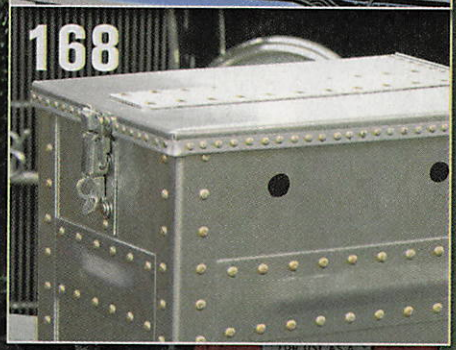

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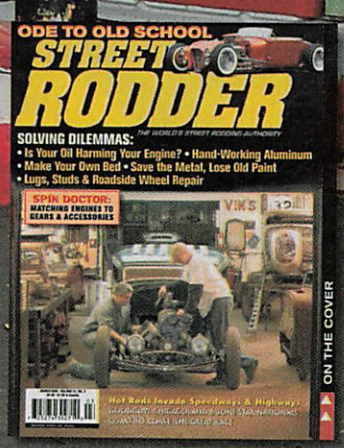
ON THE COVER: The burning of the midnight oil is a familiar nighttime ritual in our world of rodding. Here we have the left and right hands of Rolling Bones Hot Rod Shop, Keith Cornell and Ken Schmidt, working on Mike Manno's 1932 Ford Tudor. (Photo by Chuck Vranas) **INSET:** Old-school build styles are continually emulated, and John Cooper's masterpiece of an early '60s show car is spot-on. (Photo by Eric Geisert)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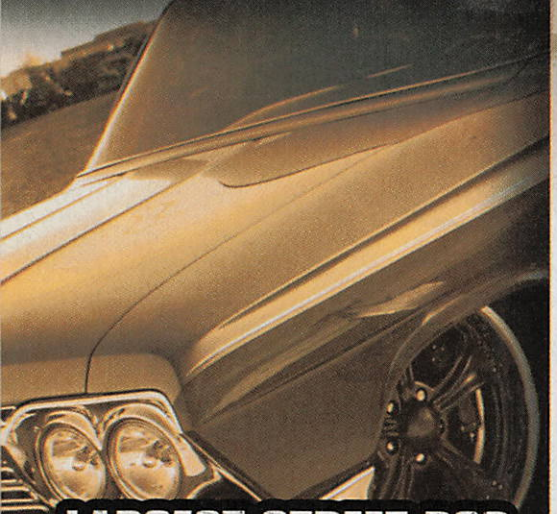

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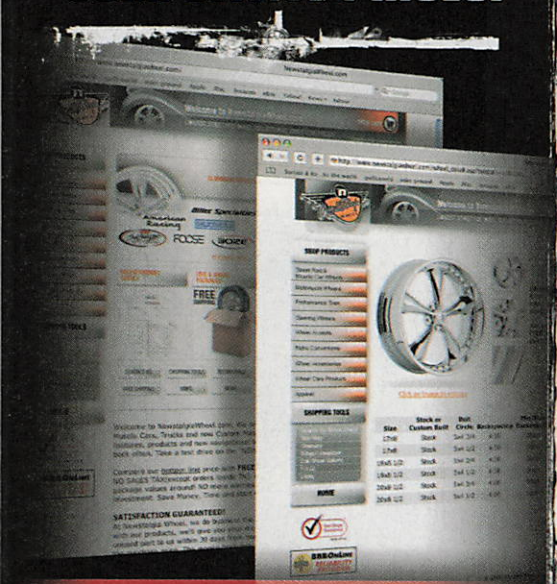

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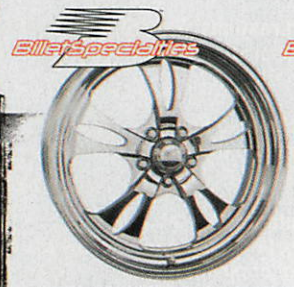

Fast Lane

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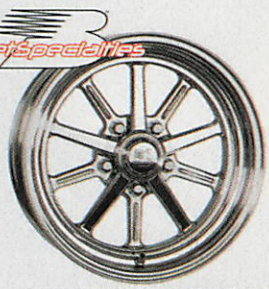

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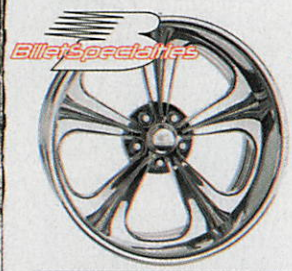
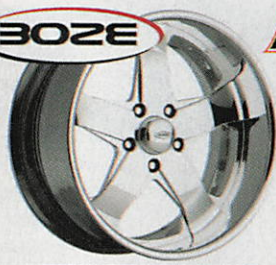


Rat Tail

SLG60

SLG04

Muscle



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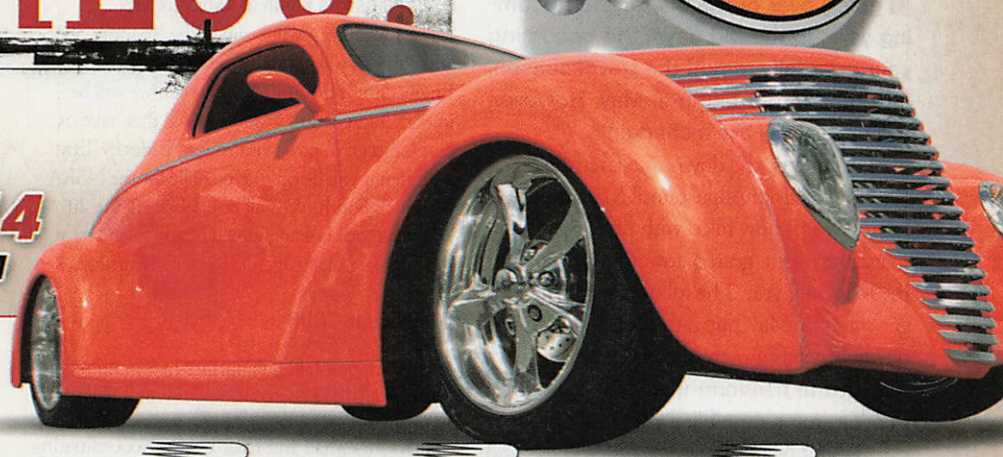
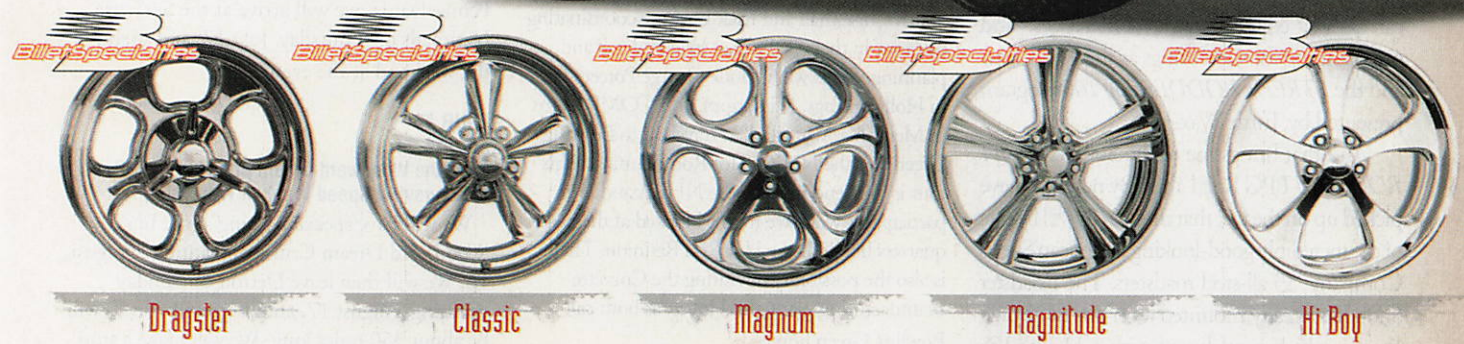
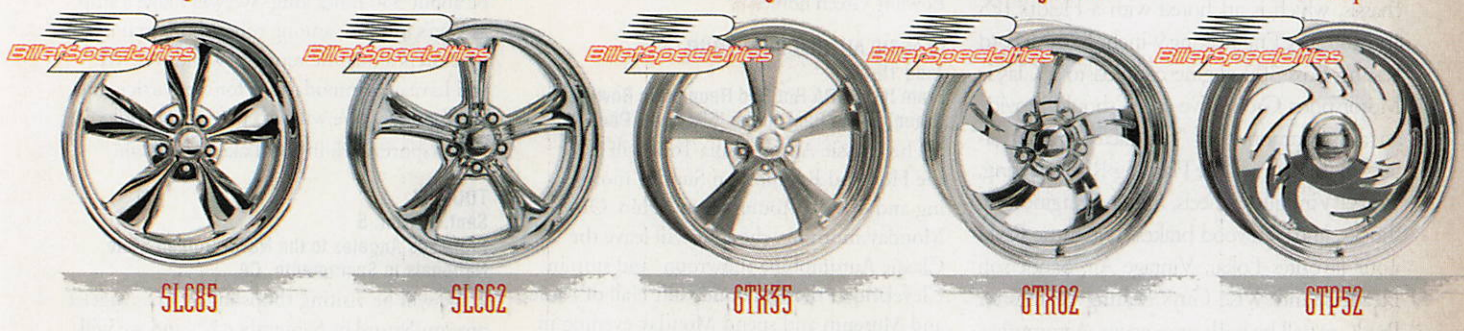




Dragster | Classic | Magnum | Magnitude | Hi Boy



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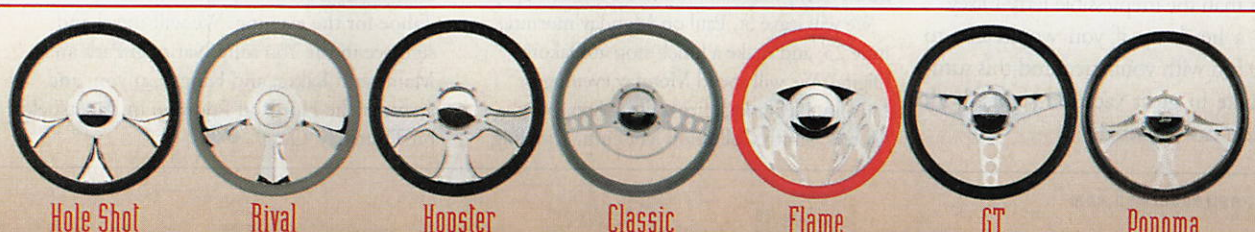
Chrome Nitrous | 390 | Hopster | Smoothie I | V60



Hole Shot | Rival | Hopster | Classic | Flame | GT | Ponoma

AVAILABLE COLORS

BY BRIAN BRENNAN | brian.brennan@sourceinterlink.com

some fun stuff

It's that time of the year when we (as in the editorial staff) find ourselves going over our plans for the upcoming year. In the old days, the upcoming year generally meant the travel season, and that would begin in May. However, the times they are a changin'.

For starters, the downtime after the Street Rod Nationals in August until May of the following year is now filled with trade shows and magazine work geared toward planning for the following year. The following year no longer starts in May but rather mid-January. As our hobby has grown over the years, we have managed to transform that "easy" portion of the year into a time filled with lots of indoor car shows, editorial trade conferences, and pre-planning for such things as the Road Tour and the *STREET RODDER Top 100* program presented by Turtle Wax.

And that brings me to the 2008 *STREET RODDER*/ PPG Road Tour. By now you have picked up on the fact that the '08 car will be one of the incredibly good-looking American Speed Company '33 all-steel roadsters. The Roadster Shop has already mounted it on one of its own chassis, which is anchored with a Heidt's IFS and a Strange Engineering 9-inch. To this a Ford Racing Boss 302 engine coupled to a Classic Motorsports Group five-speed should provide an ample amount of "fun factor." Controlling all this fun will be Flaming River steering, Wheel Vintiques wheels, Strange Engineering shocks, and Wilwood brakes. Longtime Road Tour favorites Lokar, Vintage Air, Sanderson Headers, and Wise Guys Seating & Interior Products will be back once again. Aeromotive, Auto Meter Products, Classic Automobilia, Dynamat, Hushpower, National Street Rod Association, Right Coast Association, Ron Francis Wiring, U.S. Radiator, and Yogi's are some other well-known industry names that will once again be supporting the Road Tour. And, of course, where would the RT car number 13 be without chauffeur supreme—the one and only individual who has driven the previous 12 cars every year and every single mile—none other than the irrepressible Jerry Dixey.

Here's a heads-up if you would like to have some fun with your street rod this summer and take in great vacation sights, both car- and non-car–oriented.

LOKAR PERFORMANCE PRODUCTS TOUR
April 26-May 4
From the Roadster Shop in Elgin, IL, to the NSRA Nationals South in Knoxville, TN

The Lokar Tour will begin at the Roadster Shop and work its way to Heidt's Hot Rod Parts, Strange Engineering, and Auto Meter when we will be in the Chicago area. Our route will then take us past Chicago to pay a visit to Rad Rides by Troy, and then it will be on to Knoxville for the NSRA Nationals South. We will be celebrating the 20th anniversary of Lokar and will be special guests at the famous Lokar Open House on Thursday.

VINTAGE AIR TOUR
June 7-15
From Vintage Air Headquarters in San Antonio, TX, to the NHRA Hot Rod Reunion in Bowling Green, KY

Jack Chisenhall and Rick Love are coordinating this tour in their traditional style of detail and planning. Stops will include George Poteet's farm in Holly Springs, Mississippi, and COMP Cams in Memphis. We will then travel on to Bowling Green and the NHRA Hot Rod Reunion. This tour is fully endorsed by the NHRA and tour participants will have rooms blocked at the headquarters hotel for the Hot Rod Reunion. There is also the possibility of visiting the Corvette manufacturing plant and Holley, as both call Bowling Green home.

CLASSIC AUTOMOBILIA TOUR
June 15-22
From the NHRA Hot Rod Reunion in Bowling Green, KY, to Back to the '50s in St. Paul, MN

The Classic Automobilia Tour will leave the Hot Rod Reunion on Sunday morning and drive to Youngstown, Ohio. On Monday morning, the tour will leave the Classic Automobilia showroom and stop in Cleveland at the Rock and Roll Hall of Fame and Museum and spend Monday evening in Detroit, Michigan, visiting American Speed Company and Ford Racing. We will spend Tuesday evening in St. Ignace, near the upper peninsula of Michigan. Wednesday evening will be spent in northern Wisconsin, and we will arrive at the Back to the '50s event on Thursday, June 19, and spend the weekend in St. Paul at the event.

GOLDEN RODTRONICS TOUR
June 22-29
From Back to the '50s in St. Paul, MN, to the NSRA Rocky Mountain Nationals in Pueblo, CO

We will leave St. Paul on Monday morning, June 23, and make a lunch stop at Dakota Digital. We will spend Monday evening in Lincoln, Nebraska, after touring Speedway Motors' Smith Collection Museum. Traveling across Nebraska, we will make stops in Cheyenne, Wyoming, the Golden Rodtronics store in Golden, Colorado, and the Garden of the Gods Visitor and Nature Center in Colorado Springs. We will arrive in Pueblo and the Rocky Mountain Nationals on Thursday, June 26.

COKER TIRE TOUR
July 12-20
From Chattanooga, TN, to the Syracuse Nationals in Syracuse, NY

The Coker Tire Tour will kick off at Coker's headquarters in Chattanooga, Tennessee, with a big party on Saturday, July 12. The tour will make a stop at The Victory Junction Gang Camp for children in Randleman, North Carolina, and then through the Blue Ridge Parkway area. After traveling through Pennsylvania, we will arrive at the Syracuse Nationals on Thursday, July 17, and spend the weekend at the event.

TOUR #6
Aug. 16-24
From the Woodward Dream Cruise in Detroit, MI, to Bonneville Speed Week in Wendover, NV

We will have special parking at the huge Woodward Dream Cruise on Saturday, August 16. We will then leave Detroit on Sunday morning, August 17, and each day's travels will be about 350 miles long. We will make a stop at Yogi's in Iowa, among other shops and manufacturers along the route to Wendover. We will have accommodations for the participants in Wendover. We will also be visiting Miller Motorsports Park in Salt Lake City, Utah.

TOUR #7
Sept. 27-Oct. 5
From Los Angeles to the NSRA Golden State Nationals in Sacramento, CA

We will be visiting shops in the Los Angeles area on Saturday, September 27, and we will leave the L.A. area on Sunday morning and travel up the beautiful Pacific Coast Highway. We will be making stops along the way as we travel to Sacramento and the NSRA Golden State Nationals.

TOUR #8
Oct. 5-12
From the NSRA Golden State Nationals in Sacramento, CA, to the NHRA Hot Rod Reunion in Bakersfield, CA

This tour will leave Sacramento on Sunday afternoon, October 5, and travel to Lake Tahoe for the evening. We will travel and sightsee in the Yosemite National Park area, Mammoth Lakes, and Kings Canyon, and arrive at the Hot Rod Reunion in Bakersfield on Thursday, Oct 9. SR

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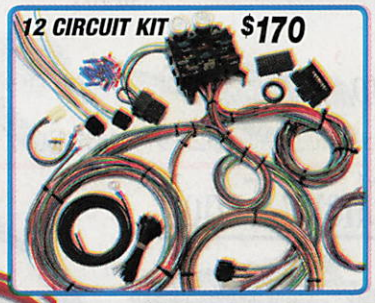

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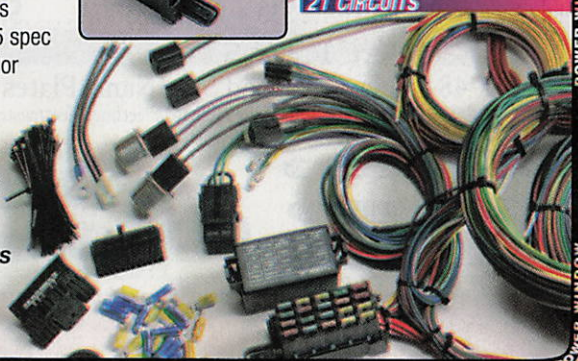

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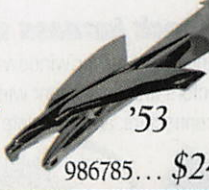

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986785... $249

'53-'54 (orig '54)
3705035..... $82.50

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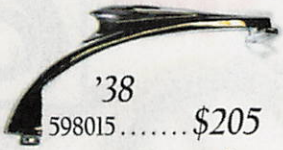
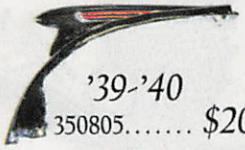


'38
598015..... $205



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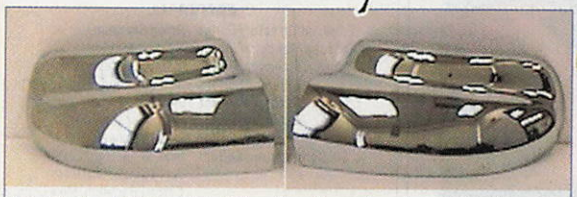

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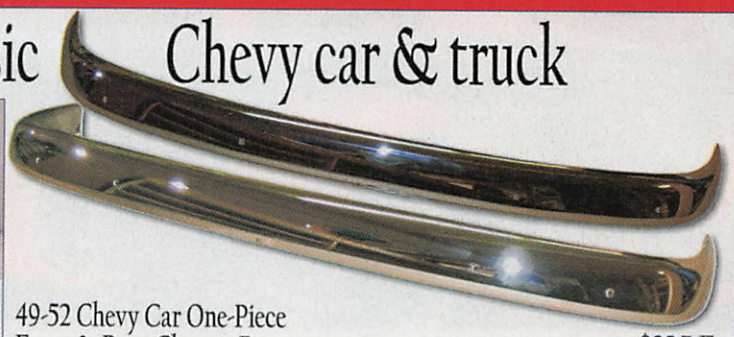

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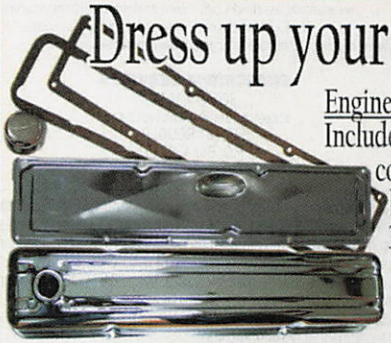

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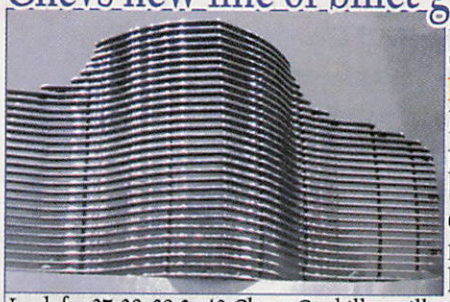

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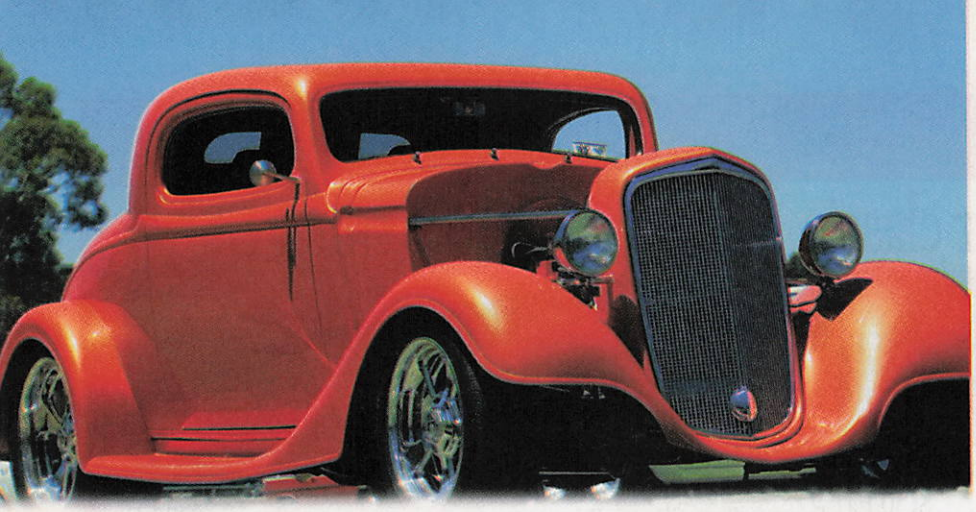

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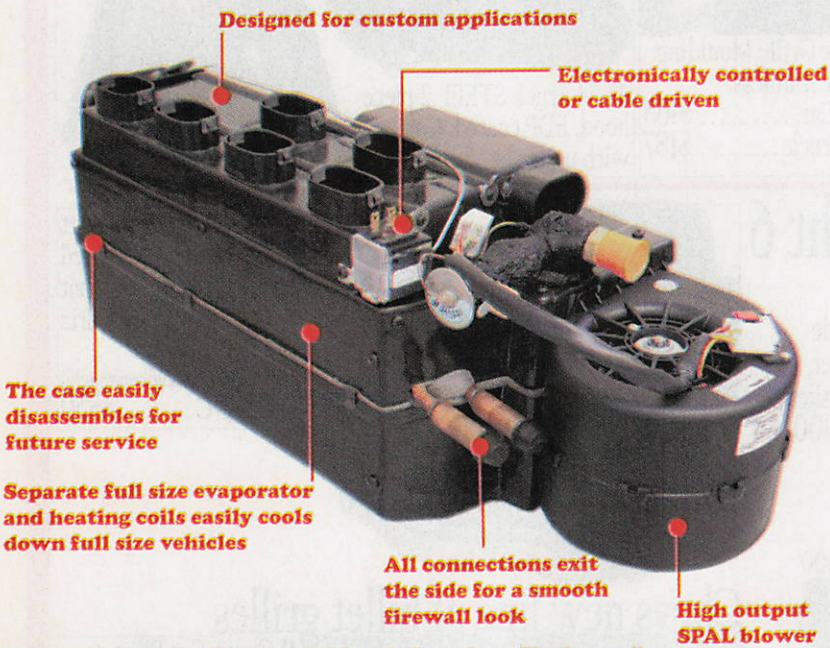
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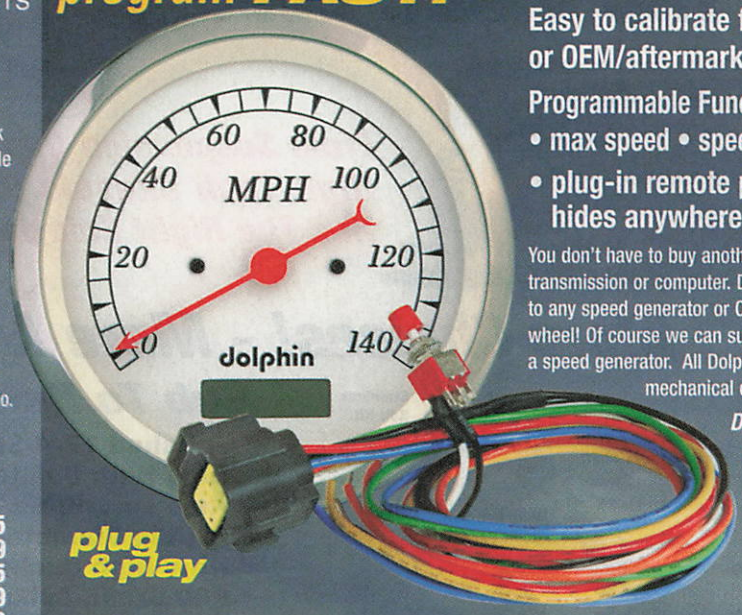

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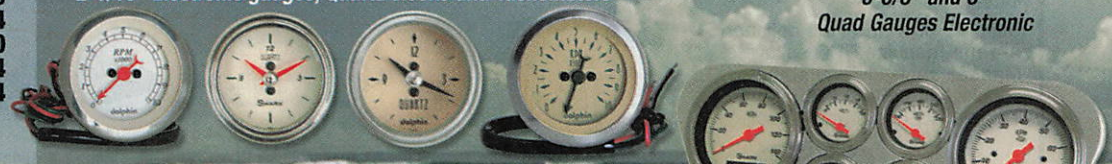

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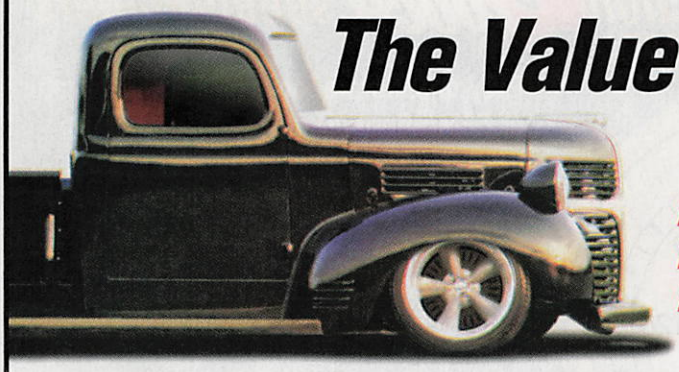

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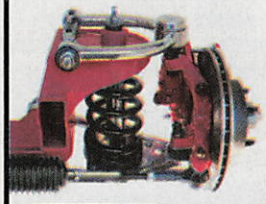

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AirRide Shock Wave system! Manual rack, new spindles, HAL shocks, and ECI big brake kit. The ultimate in comfort and ride height adjustability!

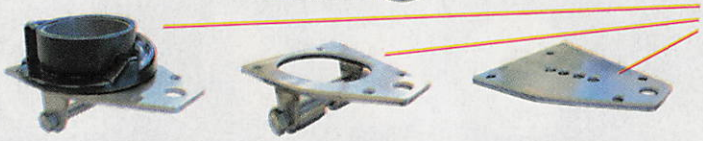
More Choices! - More Applications!

Hub To Hub Kits Include:

- Polished 17-4 Stainless A-Arms
- New High Quality Spindles & Springs
- New Low-Ratio Manual Rack & Pinion
- ECI Big Diameter Disc Brake Kit
- New High Quality Gas Shocks
- PRO Brand Coilovers On Stage 3
- Air Ride ShockWave On Stage 5
- Thickest In The Industry 5/16" Steel Crossmember & Spring Mounts
- Precision Plasma Cut Components
- Complete Instructions & Templates

All Fat Man Kits from Stage 2 to Stage 5 Include Our Exclusive Polished Stainless Control Arms At No Extra Charge.

All ISO 9002 Compliant Engineering



The Unique Lower Control Arm Design Allows You To Upgrade From Coils or Coilovers To AirRide Without A Major Re-Build Using Our Exclusive Interchangeable Base Plates.

Stage 2 Coil Spring Plate | Stage 3 Coilover/Shock Wave Plate | Stage 2 AirRide Plate

Nobody Can Fit More Cars & Trucks!

- 1933-48 Ford Cars
- 1928-89 Ford Trucks
- 1939-48 Mercury Cars
- 1934-54 Chevy Cars
- 1928-87 Chevy Trucks
- 1928-87 GMC Trucks
- 1953-62 Chevy Corvette
- 1933-37 Chrysler Cars
- 1935-37 Desoto Cars
- 1933-38 Dodge Cars
- 1933-64 Dodge Trucks
- 1933-38 Plymouth Cars
- 1933-36 Buick Cars
- 1934 Olds Cars
- 1934-36 Pontiac Cars
- 1940-41 Graham Cars
- 1937-64 International Trucks
- 1934-47 Studebaker Cars
- 1936-64 Studebaker Trucks
- 1933-37 Hudson Cars
- 1933-37 Huppmobile Cars
- 1933-41 Willys Cars
- 1946-54 Willys Truck/Panel
- 1934-41 Nash Cars
- Nash Metropolitan
- Austin & Anglia
- And More Every Day!

Using A GM Frame Clip?

Dropped GM Spindles

- Optimized Geometry
- Revised Steering Arm Position
- Taller Ball Joint Height
- Better Camber Control
- 2" Drop
- Accepts Any Disc Brakes

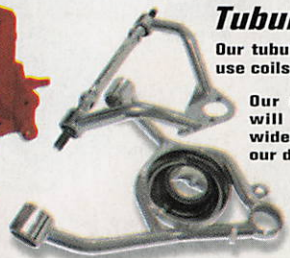
'64-'72 Chevelle
'68-'74 Nova
'67-'69 Camaro **$299** Pr.

'70-'81 Camaro **$359** Pr.

Tubular A-Arms

Our tubular arms allow you to use coils, coilovers or air ride.

Our narrowed a-arm option will allow you to use much wider wheels. Uses Stock or our dropped GM Spindles.



$899 Set of 4

Tig welded SAE 1010 thick wall .3/16" tubing. TRW and MOOG bushings and ball joints included. '67-69 & '70-81 Camaro, '64-'77 Malibu/Monte Carlo, '78-'87 Malibu/Monte Carlo

Shown With Optional Vacuum Metalized Finish

The Technology Innovator For 24 Years

The Ultimate Hot Rod Chassis

Fully Welded Frame From
$3,900

Complete Rollers From
$6,900

Optional Coilovers With Polished Stainless 4-Bar
Standard Parallel Leaf Rear Suspension
Complete 8" Rearend With Axles & Gears
9" Optional
Fully Engineered 1"x2" Steel K-Member For Maximum Strength
Trans Mount Crossmember
Body Mount Brackets
Brake Pedal (Booster & Master Kit Optional)
Precision Jig Built, CNC Mandrel Bent Frame
Polished Stainless Control Arms Standard
Big Front Disc Brakes
Really, anything you want - Just tell us what you need and we can built the custom chassis for your dream project no matter how wild
?
Engine Mounts
Rack & Pinion Steering
Stage 2 Coils Standard

Other Options:

- Power Rack & Pinion Steering
- Stage 3 PRO Coilover Front Springs
- Stage 5 Shock Wave Air Ride
- Shock Wave Air Ride
- Baer or Wilwood Brakes
- Custom Engine Mounts
- Brake Plumbing & Master Kit
- 4-Bar Rear Suspension

See Even More Info Online!

Complete Chassis For:

- 1932-40 Ford Cars
- 1946-66 Ford Trucks
- 1937-40 Chevy Cars
- 1937-59 Chevy Trucks
- 1934 Plymouth PE
- Anglia & Morris

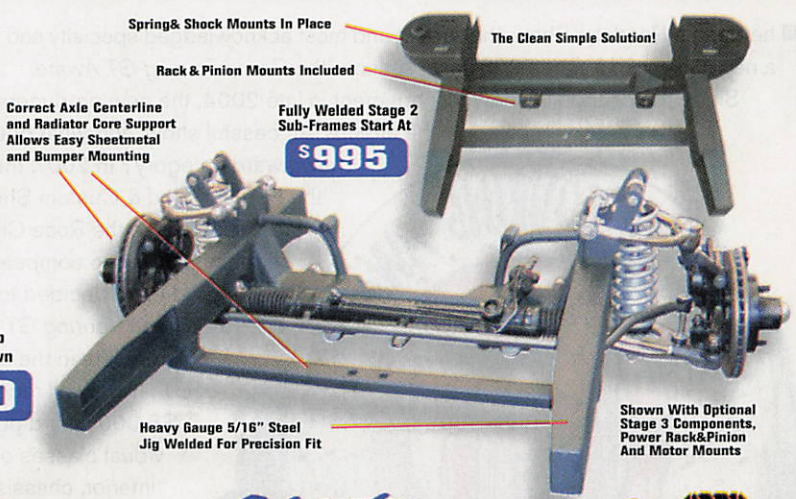
Sub-Frame Your Stock Chassis

Some Cars Simply Can't Use An OEM Sub-Frame. Too Narrow Or Just Require Too Much Fabrication. Here's Your Answer!

Frame Stubs For:

- 1935-59 Buick*
- 1936-68 Cadillac*
- 1937-48 Chevy Cars
- 1955-60 Chevy Cars
- 1964-72 Chevelle
- 1934-55 Chrysler
- 1934-55 Desoto
- 1934-56 Dodge Cars
- 1959-63 Ford Cars
- 1955-57 Thunderbird
- 1940-53 Hudson
- 1935-40 LaSalle
- 1949-56 Lincoln
- 1949-56 Mercury
- 1940-48 Nash
- 1934-56 Olds*
- 1935-54 Packard*
- 1934-56 Plymouth
- 1937-58 Pontiac
- 1948-62 Studebaker*
- Avante, Lark
- Henry J, Kaiser, Jag

*most series applications


Spring& Shock Mounts In Place
The Clean Simple Solution!
Rack & Pinion Mounts Included
Correct Axle Centerline and Radiator Core Support Allows Easy Sheetmetal and Bumper Mounting
Fully Welded Stage 2 Sub-Frames Start At
$995
Heavy Gauge 5/16" Steel Jig Welded For Precision Fit
Shown With Optional Stage 3 Components, Power Rack&Pinion And Motor Mounts

Stage 3 Hub To Hub Sub-Frame As Shown
$3,160

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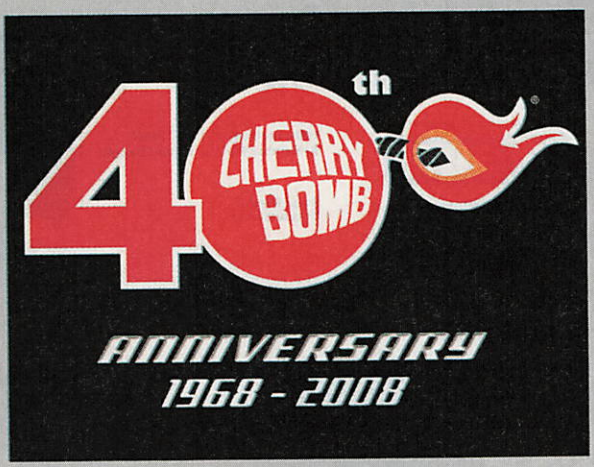
SR 10-07

BY JIM RIZZO | jim.rizzo2@sourceinterlink.com

CHERRY BOMB CELEBRATES 40 YEARS



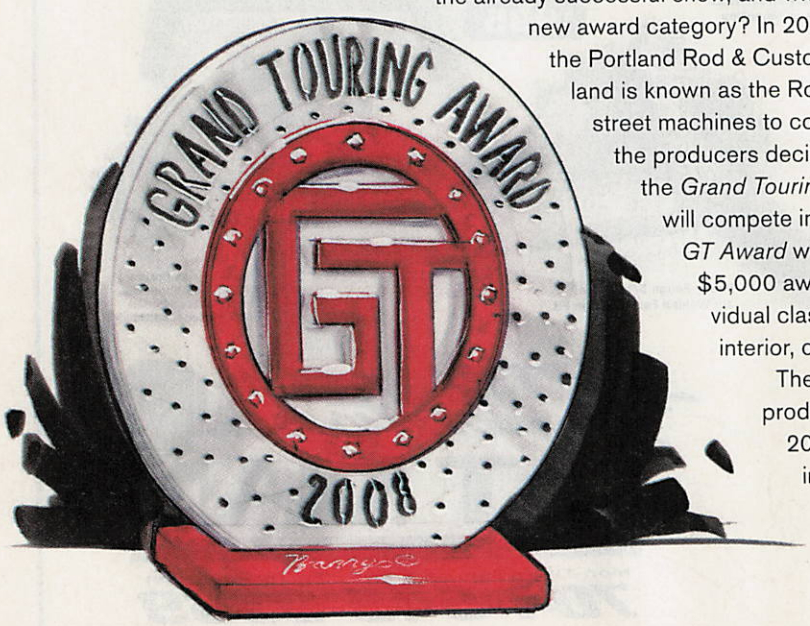
First introduced in 1968 by the Maremont Corporation, this bright red 2-foot-long straight-pipe muffler with a baffled channel lined in fiberglass produced an unmistakable, one-of-a-kind throaty sound and less backpressure for a noticeable improvement in performance. Its introduction occurred at the beginning of one of the most exciting times in the development of hot rods, 1968-1971. The Cherry Bomb Glasspack became a standard bolt-on, as it embodied in sound, the horsepower under the hood.

In March 2006, father-and-son entrepreneurs Ken and Paul Banks purchased all rights to the Cherry Bomb product line and Maremont's 630,000-square-foot manufacturing facility in Loudon, Tennessee. With an acute understanding of the value of brand equity and a long history in the exhaust business as owners of the International Muffler Company (IMCO), the new owners from Schulenburg, Texas, recognized the value of reinvigorating the brand with improved technology, and a new and expanded product line. Check out the granddaddy of hot rod sound as it celebrates its 40th year at www.cherrybomb.com.

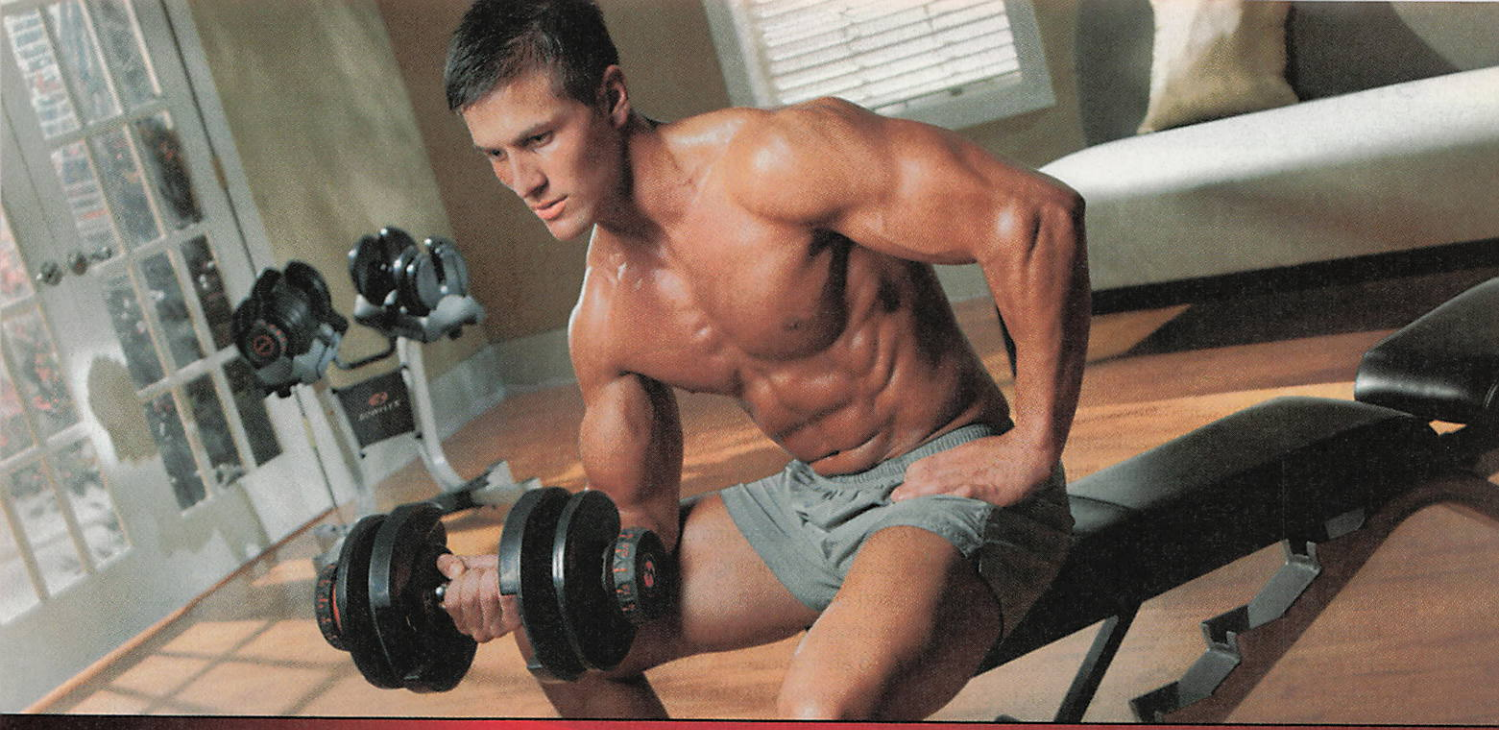
SEATTLE ROADSTER SHOW ANNOUNCES NEW GT AWARD

The Seattle Roadster Show, the largest and most acknowledged specialty and custom car exposition in Washington, announces a new top award for the 2008 show season–the *Grand Touring GT Award*.

Since the change in show management in late 2004, the new producers have been looking for ways to improve upon the already successful show, and what better way to do that than with the creation of a new award category? In 2007, the producers created a stand-alone award for the Portland Rod & Custom Show, aptly named the *Rose City Award* (Portland is known as the Rose City), which allows hot rods, custom cars, and street machines to compete head to head. For the 2008 show season, the producers decided to narrow the field in Seattle and have created the *Grand Touring GT Award*, named and inspired by the cars that will compete in the class–the street machines. The winner of the *GT Award* will receive an all-new and unique trophy, as well as a $5,000 award purse. The award category will also support individual classes of awards, including engineering, paint, engine, interior, chassis, and display.



The Seattle Roadster Show is now in its 9th year of production and will be held February 29 through March 2, 2008 at the beautiful Qwest Field Event Center, located in downtown Seattle. For an entry form and exact criteria for the *Grand Touring Award*, visit www.hotrodshows.com.



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Push your workout to the next level with this revolutionary free weight system. One pair of adjustable Bowflex® SelectTech™ 552 Dumbbells replaces 30 individual free weights—saving you time, workout space and money.

Bowflex 2005 ONE OF THE TOP 5 BEST Products Men's Health Magazine

Select the weight you want with a simple turn of the dial. A patent-pending locking mechanism selects only the weights you have dialed in.

STRENGTH TRAINING GOES HIGH-TECH.

With just the turn of a dial, you can instantly adjust each dumbbell's weight from 5 pounds to 52.5 pounds. SelectTech™ Dumbbells combine cutting-edge design and technology so you can get the results of a true free weight workout right in your own home.

- **Get dramatic muscle definition fast**
- **Perform over 30 exercises with 80+ variations**
- **Switch quickly from one exercise to the next for a faster workout in less space**

ORDER NOW and get our "Secrets of the 4-Step Rep" DVD FREE. Pay just $5/month* with zero-down financing. Or request a FREE information-kit DVD or video today.

CALL 800.952.7038 or order online at www.BowflexDumbbell.com

*On approved Bowflex™ credit card purchases. The advertised payment is based on a promotional minimum payment of 1.5% of purchase price. The amount of your total Minimum Monthly Payment will depend on additional purchases and account balances. See Cardholder Agreement and Disclosure Statement for details. †100% Satisfaction Guarantee includes full refund of purchase price, less shipping and handling. Call for complete details. ‡Individual results may vary. Participants' results based on using the Bowflex® home gym and the "Fast Fat Loss Now" program included in the owner's manual. © 2007 Nautilus, Inc. All rights reserved. Bowflex, the Bowflex logo, and SelectTech are either registered trademarks or trademarks of Nautilus, Inc. (0308) P0308STRODBICEP

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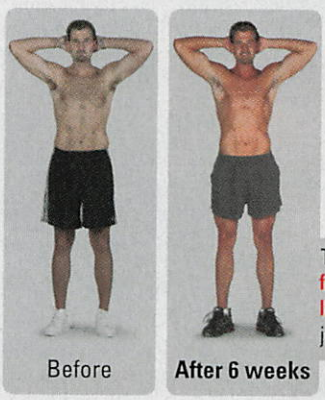

Before | After 6 weeks

Tye lost 13 lbs of fat and gained 13 lbs of muscle in just 6 weeks!‡

"Now I spend more time with my shirt off than on." –Tye Dawson

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Be Strong. Be Fit. Be Bowflex.

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WYOTECH STUDENT WINS EDELBROCK MEMORIAL SCHOLARSHIP

Once again, Vic Edelbrock and his company, Edelbrock Corporation–a leading manufacturer of performance aftermarket automotive products since 1938–have shown their support for the automotive technicians of tomorrow with a generous scholarship to a WyoTech student. WTI Foundation is excited to announce that Travis Miller is the recipient of the 4th annual *Vic Edelbrock Sr. Memorial Scholarship* award of $5,500. The award will be officially presented at the Laramie, Wyoming, campus by Vic Edelbrock Jr., president of the Torrance, California-based corporation.

Miller is currently finishing advanced automotive training programs in High Performance Power Train at WyoTech's Laramie campus. Also an inductee to the National Technical Honor Society, Miller is quick to point out that he plans to put his education to use by opening his own shop, building performance vehicles. "I believe WyoTech's high-performance engine class has been a large accomplishment for me and increased my knowledge," he said. "I also plan on attending more classes in the future that will add to my knowledge in the field."

WyoTech offers advanced training in applied service management; advanced diesel; advanced automotive diagnostics; street rod and custom fabrication; motorsports chassis fabrication and high-performance powertrains; and trim and upholstery technology. For more information, visit WyoTech's Web site at www.wyotech.edu.

59th ANNUAL GNRS

The 59th annual Grand National Roadster Show–which will be held January 25-27, 2008–is proud to honor Troy Trepanier of Rad Rides by Troy in Manteno, Illinois, as *Builder of the Year*. Trepanier will be presented with this esteemed award at the show this year at the Fairplex in Pomona, California.

Trepanier, at just 38 years old, is quickly gaining recognition, taking home Detroit's top honor, the 2007 *Ridler Award*, with *First Love*–a retro-nostalgic '36 Ford three-window coupe built for Ross and Beth Myers that certainly evokes feelings of its namesake. The owner had the car since he was 9 years old and always wanted to "turn it into something special." Needless to say, that mission was accomplished, thanks to Troy and the team at Rad Rides. Additionally, Trepanier was invited to build a pedal car for last year's Grand National Roadster Show's 75th Anniversary of the Deuce exhibit.

A three-day event, the GNRS is the longest-running indoor car show in the world and home to the coveted *America's Most Beautiful Roadster* award–a perpetual 9 1/2-foot-tall trophy that attracts the best roadsters from all over the world to compete in this historic annual event. There will also be on display the best custom cars, trucks, classics, motorcycles, and hot rods in the industry. Previous recipients include Boyd Coddington of "American Hot Rod" on the Discovery Channel, and The Learning Channel's "Overhaulin'" star, Chip Foose. For more information, please visit www.rodshows.com, or call John Buck Enterprises at (877) ROD-SHOWS.

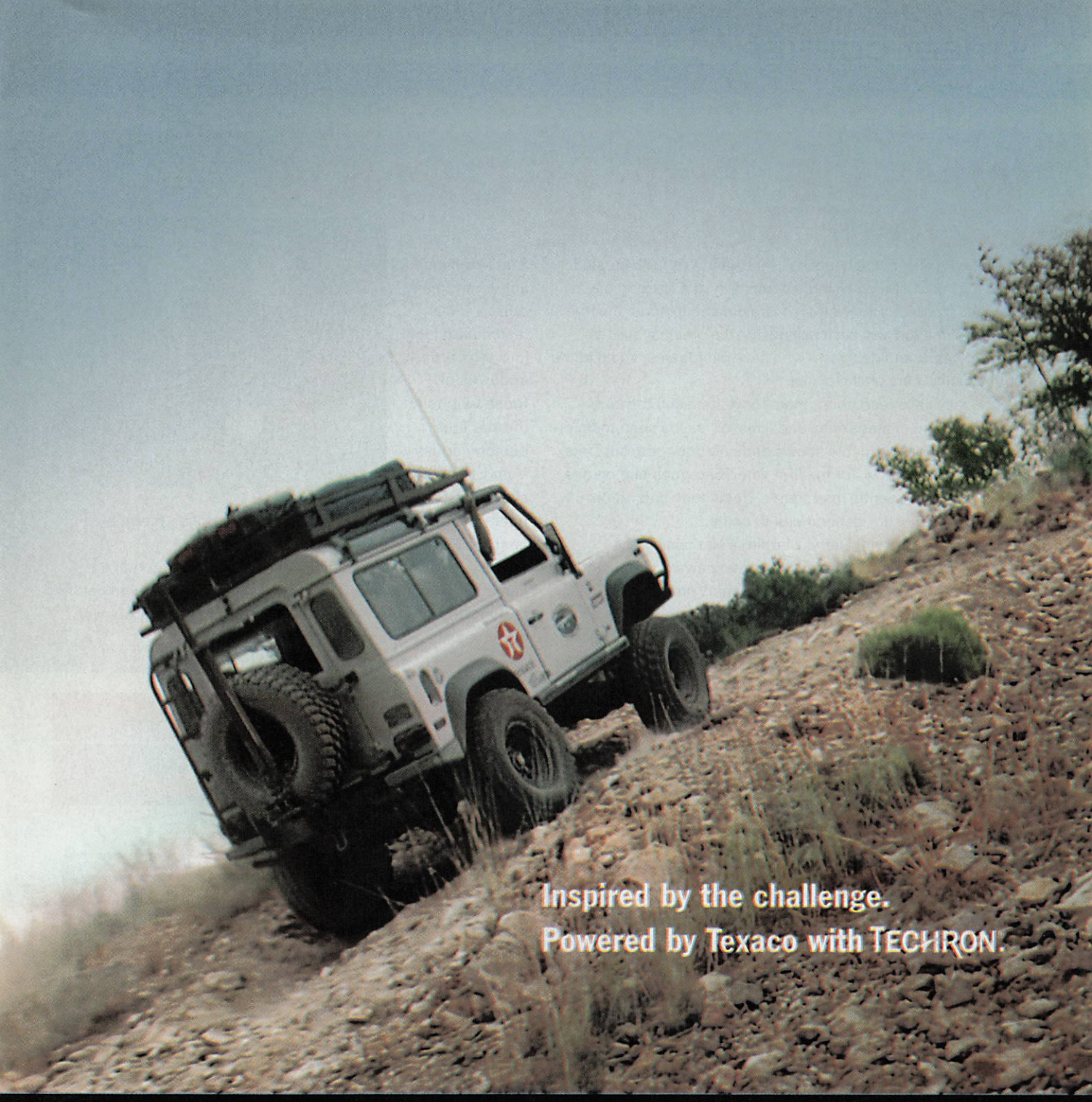
TEA'S DESIGN CELEBRATES 25 YEARS

Tom Ashton, president and CEO of Tea's Design, has been making the time folks spend in their street rods comfortable for many years. After his release from the Navy in 1972, Ashton attended the 1972 Street Rod Nationals in Detroit and immediately caught street rod fever. Learning the upholstery trade in a local shop, Ashton set out on his own and opened Tea's Design in Rochester, Minnesota, in 1983.

Tea's Design displayed its seating products for the first time at a major event in 1985 at the NSRA Street Rod Nationals in Oklahoma City. Tea's display has been a fixture at all of the major street rod events around the nation over the years; the company's display not only showcases its wide range of products, but also gives folks an opportunity to take a break and try a Tea's Design seat on for size. Many professional builders–including Troy Trepanier, POSIES, and Bobby Alloway–turn to Tea's Design for seating in a lot of their high-profile projects. In addition, Tea's seats have been used in many of *STREET RODDER*'s Road Tour cars.

A few years ago, Ashton's son, Charlie, followed in his father's footsteps at Tea's Design, and he now heads the sales and production team. The energy and drive of this father-and-son duo will ensure that the street rod hobby has high-quality and comfortable seating available for many years to come.

For more information, call (507) 289-0494, or visit www.teasdesign.com.



When the Arizona Land Rover Association goes off road, they trust their vehicles to the unbeatable cleaning power of Texaco with Techron. It's the fuel that removes deposits from vital engine parts left by lower quality gasoline. Which means better performance whether the road is made up of rock, dirt, mud or concrete.

Trust your car to the

www.texacowithtechron.com

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Actual photo from Cabins, Mansions and Mines courtesy Lake Effect Pictures.

WHERE THE LEGENDS COME TO LIFE

The "Hall of Fame Legends" series and Web site created by nationally known radio personality and life-long car buff/collector Jonnie King were created to honor the true legends of the rod and custom industry: the greatest builders, artists, owners, and designers who have put together some of the most beautiful cars on the planet.

You may have read about them for years, seen the cars they've created in magazines and films, or maybe seen them on one of the television/cable shows dedicated to rods, customs, and classics, but now, for the first time, King goes one on one with these true legends to preserve, document, and record their oral histories for generations to come.

In cooperation with Darryl Starbird's National Rod & Custom Hall of Fame Museum, King interviews and gets the personal stories of such legends as Gene Winfield, George Barris, Spence Murray, Norm Grabowski, Jerry and Elden Titus, John D'Agostino, Chuck Miller, Jerry Weesner, M.K. John, Darryl Starbird himself, and many, many others. It's a fascinating look into the careers and lives of those who took the rod and custom industry from its humble, shade-tree, backyard beginnings to the multimillion-dollar, mega business it has become.

Now, here's the good news: You can hear "The Hall of Fame Legends" series online at www.legends.thewwbc.net. All of these legendary interviews will be available on CD as well, so you can hear your favorites anytime you want.

streetrodderweb.com

LOG ON NOW

this month

SPEED WEEK 2007

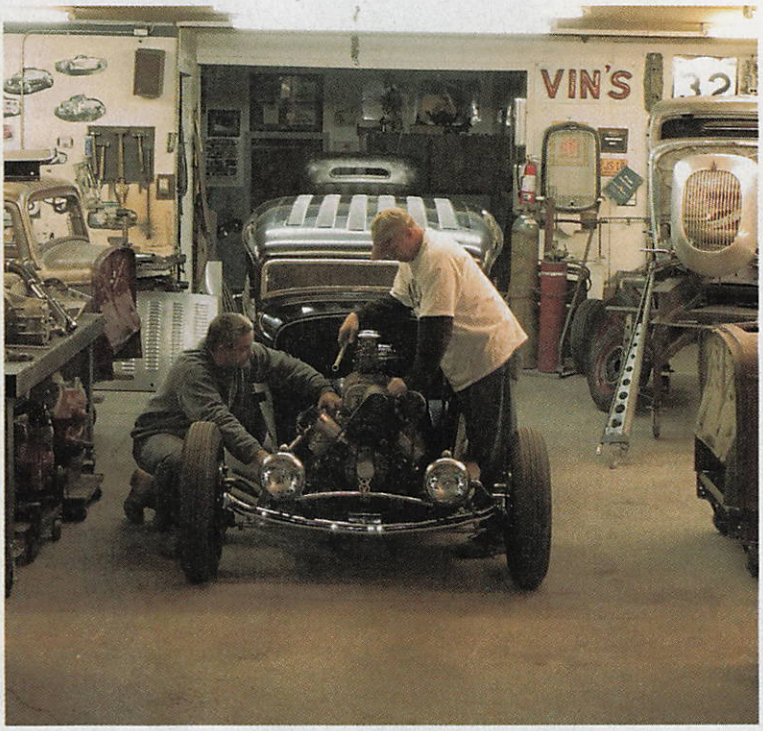
We sent longtime freelancer and hot rodder Frank Oddo to the Salt Flats to check out the 59th annual Bonneville Nationals. It was a record-setting event on several fronts, with 500-plus entrants competing on the salt. Never before have so many gone so fast where it seems so slow!

LOAD AND GO: PART II

We are getting close to enjoying our Speedway Motors Signature Series '32, but we needed an exhaust system before we take the jaunt down the highway. And to that end, we visited MagnaFlow Performance Exhaust and had one of their MagnaFlow universal-fit Hot Rod Kits installed.

FOR STARTERS

The inner workings of Brennan's mind—your guess is as good as ours.



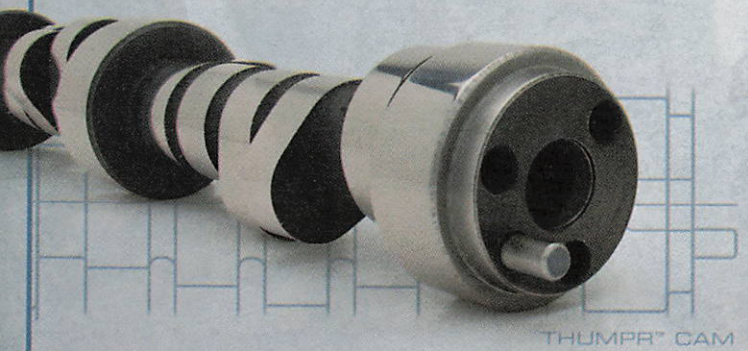
BUILD A BETTER ZZ4 ENGINE

COMP Cams® Introduces Five New GM ZZ4 Power Packages

GM's ZZ4 engine has great performance potential straight out of the crate; but in today's realm of high performance engines, 350 hp is not exactly something you brag to your buddies about. COMP Cams® is dedicated to producing top quality components that draw the most power and torque from any engine platform. As a result of this effort, COMP has designed bolt-on GM ZZ4 power packages that dramatically improve the horsepower, torque and "fun factor" associated with this engine.

Test results prove that carefully selected combinations of COMP Performance Group™ products can transform your stock ZZ4 into a small block powerhouse with bullet proof reliability. Each COMP Cams® Performance Package has been dyno tested in-house to demonstrate real world, repeatable results. After completing Stage 1 of the five performance packages, select the level of horsepower you desire from the four remaining stages to deliver dependable, streetable power.

learn more @ www.zz4build.com



"THUMPR" CAM

STAGE 1 – ROLLER ROCKER ARM AND PUSHROD PERFORMANCE PACKAGE

+16 HP

Package Components:

Pro Magnum Rocker Arms™ #1301-16

Magnum Pushrods #7608-16

STAGE 2 – THUMPR™ CAM & BEEHIVE™ VALVE SPRING PERFORMANCE PACKAGE

+55 HP

Package Components:

Thumpr™ Camshaft #08-600-8*

Beehive™ Valve Springs #26918-16

Retainer Set #787-16 Steel
#788-16 Titanium

* Not intended for fuel injected motors

STAGE 3 – MUTHA THUMPR™ CAM & BEEHIVE™ VALVE SPRING PERFORMANCE UPGRADE

+64 HP

Package Components:

Mutha Thumpr™ Cam #08-601-8*

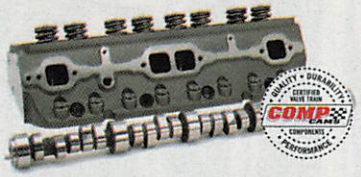
Beehive™ Valve Springs #26918-16

Retainer Set #787-16 Steel
#788-16 Titanium

* Not intended for fuel injected motors

STAGE 4 – RHS™ 180 CC CYL. HEAD W/ THUMPR™ CAM

+83 HP



Package Components:

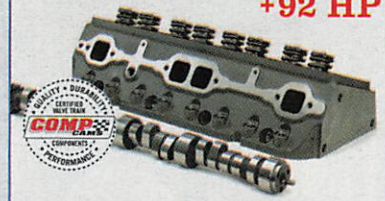
RHS™ Pro Action™ Cylinder Heads #12318-05 Cast Iron 180 CC Runner/64 CC Chamber

Thumpr™ Camshaft #08-600-8*

* Not intended for fuel injected motors

STAGE 5 – RHS™ 180 CC CYL. HEAD W/ MUTHA THUMPR™ CAM

+92 HP



Package Components:

RHS™ Pro Action™ Cylinder Heads #12318-05 Cast Iron 180 CC Runner/64 CC Chamber

Mutha Thumpr™ Cam #08-601-8*

* Not intended for fuel injected motors

Complete Dyno Graphs & Detailed Package Information Can Be Found @ **www.compcams.com**

DESIGN OBJECTIVES

Engineered To Finish First.

- [x] 1. MAXIMIZE POWER OUTPUT
- [x] 2. BULLET PROOF RELIABILITY
- [x] 3. COST EFFECTIVE PACKAGES
- [x] 4. NASTY, AGGRESSIVE IDLE
- [x] 5. UNMATCHED "FUN FACTOR"

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Billet Specialties™

LOOK WHAT'S NEW!

NEW BRAKE/CLUTCH PEDALS

Product Features:
- Backside offers two mounting positions center or offset
- Oval pedals can be mounted vertical or horizontal
- Machined non-slip surface

Brake/Clutch Pedals $32.95
Available with a polished or black anodized finish.

NEW DIMMER SWITCH COVER

Product Features:
- Machined non-slip surface
- Stainless steel set-screw mounting
- Fits Chevy & Ford applications

Dimmer Switch Cover $13.95
Available with polished or black anodized finish.

NEW GAS PEDALS

Product Features:
- Dual Delrin bushings for smooth low friction operation
- Base offers left or right mounting positions
- Reversible pedal arm for extra floor clearance
- Wider pivot base for added stability
- 1:1 pedal ratio - works with all carbs
- CNC machined non-slip surface
- Spring loaded pedal
- Stainless hardware

Gas Pedals $99.95
Oval or rectangle pedal styles are available with a polished or black anodized finish.

DOOR HANDLES / WINDOW & VENT CRANKS

NEW **BALL MILLED $69.95/Pair**
New ball milled design with steel spline insert and dual set-screw locking system.

NEW **PROFILE HANDLES - RAIL $84.95/Pair**
New 3D machined design with steel spline insert and dual set-screw locking system.

PROFILE STEERING WHEELS

THE PRODUCT OF STATE-OF-THE-ART 3D MACHINING TECHNOLOGY

PROFILE STEERING WHEEL PACKAGES FROM $460.00

PROFILE COLLECTION

SLG SERIES

STREET SMART LINE:
AMERICA'S AFFORDABLE BILLET WHEEL

STREET SMART LINE
17" FROM $1185

Steering Wheel Packages From $355

VINTEC SERIES: THE FUSION OF CLASSIC DESIGN WITH MODERN MATERIALS

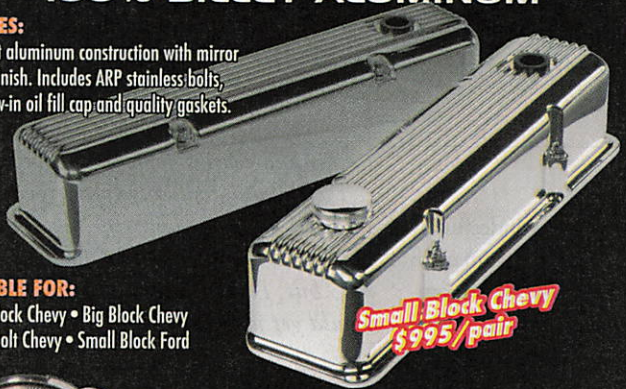
VINTEC 17"
FROM $1185

VINTEC DISH 17"
FROM $1330

SOFT LIP
VINTEC DISH 17"
FROM $1535

PROFILE VALVE COVERS
100% BILLET ALUMINUM

FEATURES:
Solid billet aluminum construction with mirror polished finish. Includes ARP stainless bolts, billet screw-in oil fill cap and quality gaskets.

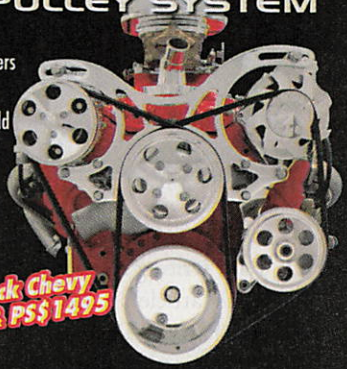


Small Block Chevy
$995/pair

AVAILABLE FOR:
- Small Block Chevy • Big Block Chevy
- Center Bolt Chevy • Small Block Ford

V-TRAC: THE MOST COMPLETE V-BELT PULLEY SYSTEM

INCLUDES:
- Polished billet aluminum brackets, pulleys, & covers
- Polished 105 amp alternator
- Polished Sanden SD-7 AC compressor with manifold
- Edelbrock high performance water pump
- Maval Mfg. power steering pump
- Polished 12-point ARP stainless fasteners
- Goodyear Gatorback belts



Small Block Chevy
With AC & PS $1395

Big Block Chevy
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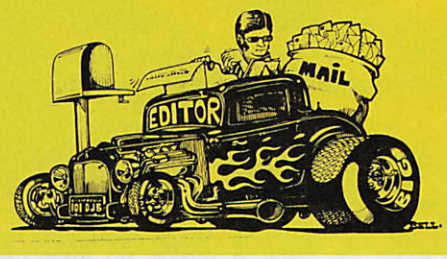
BY BRIAN BRENNAN | brian.brennan@sourceinterlink.com



TRACTORS AND STUFF

I am writing to you in regards to Eric Geisert's article in the November issue ("Pete's Party"). There is a picture on page 145 of that article of a Ford tractor with a "well-detailed Flathead engine."

Did you know that Ford offered the Flathead engine as a dealer-installed option? My father worked in a Ford implement dealership in the late '40s and early '50s before starting his own garage. I remember him talking of these tractors and seeing some in his shop for repairs in the mid- and late '50s.

I called the dealership (Hartmann Farm Supply Inc., 618-785-2333) recently to see if my memory was correct. The dealership is still in existence and upon asking for the owner's son, I was told by *him* (80 years old and still working!) that indeed I was correct. He said they had records of installing several of these and there were still several of them running on farms in the area today.

Someone other than Ford (aftermarket) manufactured the kit, and he said it included motor mounts, exhaust, clutch, and pressure plate; he also noted that the clutch was what usually went out in them first. Perhaps you should have checked out the tractor more closely to see if it was indeed owner-built or one of the few "Hens Teeth" that was installed at a dealer.

I enjoy your articles and magazine very much. I have been reading it since it first came out, as I worked where it was printed in Sparta, Illinois, back in the '70s. Thanks for listening, and if you need any more info, I would be more than happy to help.

Raymond Hammel
Poway, CA

Many thanks for the heads-up, Ray, as I have seen a number of early tractors with Ford Flathead conversions at tractor rod runs.

FLAG STARTERS

Thanks so much for the wonderful article on flagmen. I, too, was a flagman in my early days. I flagged at the Montgomery, New York, strip when it first opened in 1958. That strip was one of NASCAR's earliest forays into drag racing. I never thought about flagging style but rather tried to emulate what I saw in the magazines.

It seemed the most memorable event of that era for me was flagging off a match between Don Garlits and Art Arfons. The noise was unbelievable, yet I never felt threatened and just kept on flagging. It's interesting to see how much has changed since then, I remember dragster drivers wearing T-shirts and sunglasses. (Helmets were, of course, de rigueur.)

For several years, I would meet guys who recognized me. They told me that every driver studied the flagman's face, looking for some cue or edge they could use to get an advantage. But they never admitted to having found such an advantage. Who knows—maybe they did.

I was also involved in early drag racing in New Jersey through the long-gone New Jersey Tuning Association. We solved the problem of disputes over whether a car had jumped the flag by having the engineer who designed and built our timers add a push-button switch that was placed on the ground and tied to the timer; the flagman pressed the button with his flag, thus arming the timer. A red light would light up over the offending driver if the start beam was broken before the flag came off the button. This feature eliminated all such disputes.

At the time I was flagging, I was also racing a channeled '34 coupe in C Altered. Even in the early years, I was more interested in the street than the strip with the result that the last time I went to the drags they started with flags. And I'm still on the street in a '37 sedan. Keep up the good work.

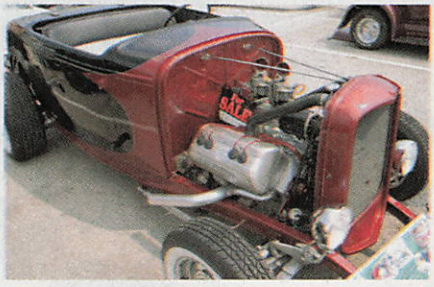
Frank Carey
West Melbourne, FL

Frank, thanks for sharing with the rest of us your thoughts on a bygone era. I myself grew up with the likes of C.J. Hart and another whose name escapes me, but I was fascinated by how he would get us going.

PRESCRIPTION FOR HAPPINESS

I was in the middle of a bad month, and then I got the latest *STREET RODDER*. It made my day and then some.

I can't thank you enough for printing the 100-year anniversary announcement, but then my wife and I saw our newly completed '32 roadster on page 75. We rolled out the car, *Rolling Thunder*, for the 38th annual Street Rod Nats. It received



a lot of great reviews, even from ole Speedy Bill. The lack of windshield makes the car a pure joy to drive.

That's the payoff, my friend—to put out your hardest effort, day after day, month after month, and to see your blood, sweat, and tears appreciated in a great magazine.

Capt. Jack III
Via the Internet

Well, Capt. Jack, we do try, and it's always fun when it brings joy to our readers, much like the sport we love.

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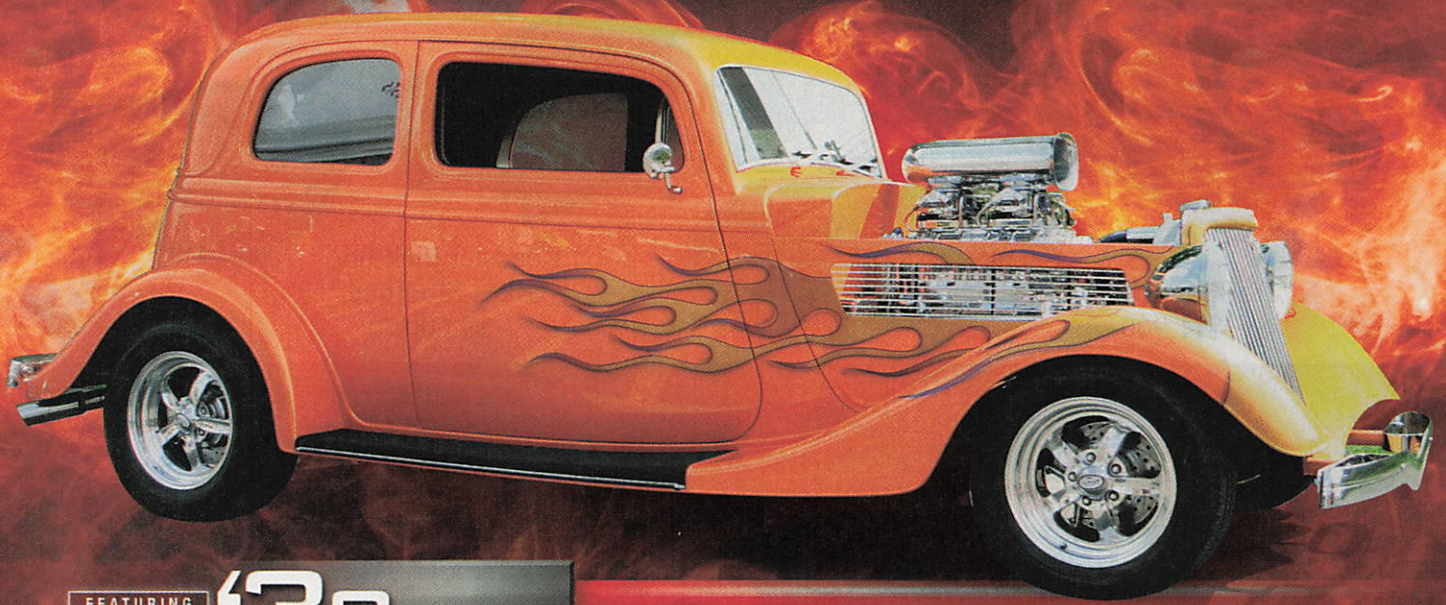

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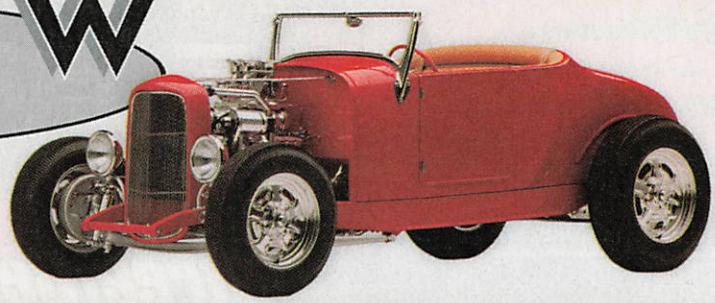
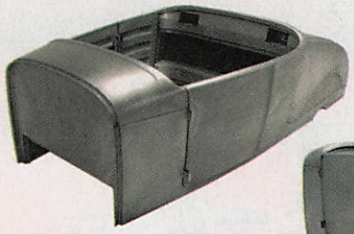
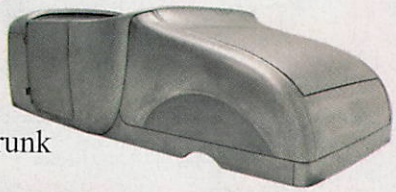


XL27 Roadster Bodies





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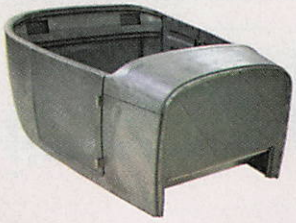

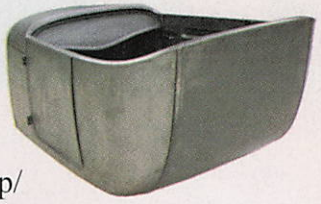

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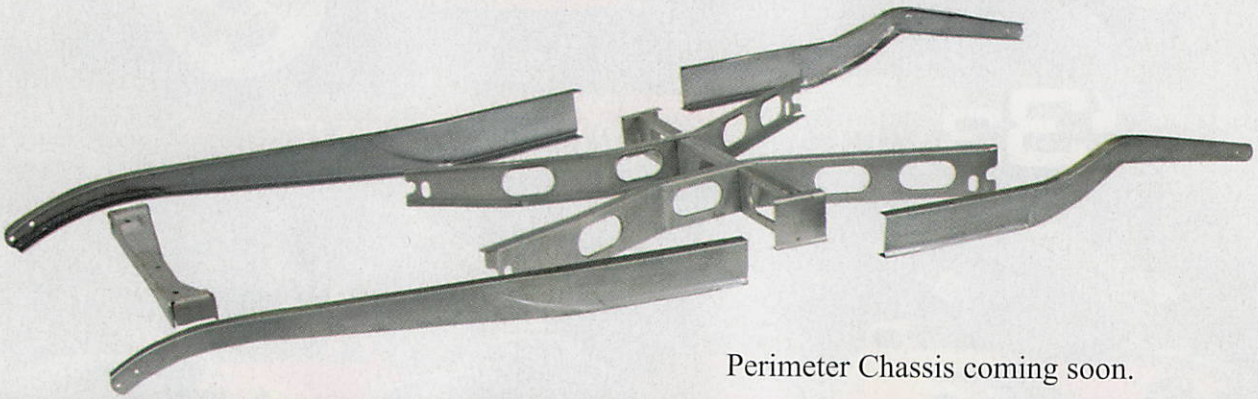

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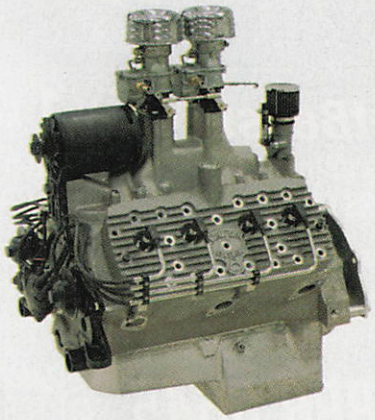

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CHEVYS AND WOOD

We are *STREET RODDER* subscribers and recently received the November issue. We were please to see the letter from Ted Bashinski, titled "Chevy is Best." Ted talked about a '35 Chevy Master Deluxe and the pains of cars with rotten wood.

I think we may be able to help. We too were drawn in by the allure of an OEM four-door suicide rod when we purchased our '35 Master Deluxe two years ago. Like most projects, we had no idea how much work was ahead until we peeled back the door panels. The wood is still there in most parts of the car, although it is far beyond repair, so we will use it for patterns as we replace it with metal.

If it were not for the advice of another longtime, experienced rodder from Daytona Street Rods who recommended using metal and bear-claw latches, we may have tried to stay with the wood. Although we drive the car for short trips, we don't feel it's ready for extensive runs.

We have opted to go with steel for safety reasons in the unlikely event of a collision, plus indefinite door alignment issues with wood (in Florida where humidity averages 90 percent). As for reference material, we found the Motorbooks International workshop book, "Hot Rodders Bible," by Gerry Burger and Steve Hendrickson; there is some material about replacing rotten wood on pages 75-81.

Kurt and Dawn Van Dyke
Cocoa, FL

Chevys and woodworking go hand in hand. And while many rodders try to keep the wood or replace it, going the steel route is the better long-term solution. We have our eyes (and ears) open, and if any rodders are replacing wood or installing steel, we would like to know about it, as it "wood" be a good story.

ON THE SUBJECT OF KITTIES

I just read your article about the kitty cat. Let me say that if there were more people like you and the others involved in this adventure, the world, not just the street rodding part, would be so much better off. God bless all of you.

Keep it between the fences,

Frank Ward
Murfreesboro, TN

MORE ON MOTOR FROM MOTORHEAD

I just read the Motor editorial. Great job, Chief! Mary Ann and I appreciate the mentions. Even though I was at ground zero for the whole ordeal, it still is an amazing story to read. It has to be the non-internal combustion, feel-good story of the 2007 season.

Jerry Dixey
Road Tour Chauffeur
Youngstown, OH

Thank you, Jerry. Now get back to planning the '08 Road Tour, which is shaping up to be the best yet!

MORE ON MOTOR

I just read your December editorial. What does it have to do with hot rods (modified cars)? Absolutely nothing, but it speaks volumes about the bulk of the people in this hobby. Good job.

Jeff Hodge
Via the internet

ONE LAST MOTOR STORY

As I have said before, I usually start reading *STREET RODDER* on page 10.

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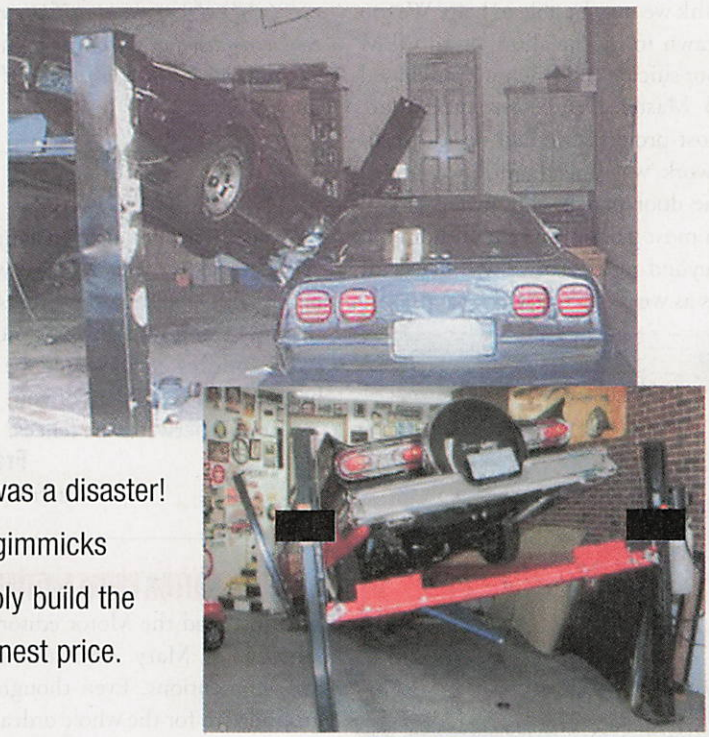

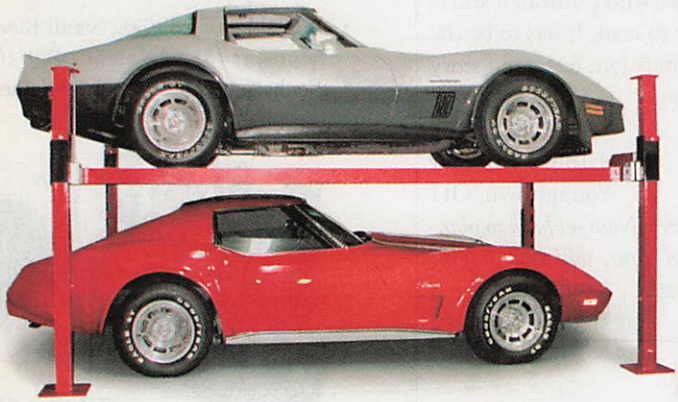

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Your articles and stories are always great, not that I always agree with you, but this time you outdid yourself. I want to applaud you and think you deserve a humanitarian award. For sure loved the drive story. I will join one of your Road Tours if I ever get my '40 pickup finished.

Billy Cruce
Quartz Hill, CA

Billy, as always, we enjoy your letters and the staff is particularly fond of them when you disagree with me (which they also do on a repeating occurrence).

FARM BOY

I saw the picture in the November *STREET RODDER* of the Massey Ferguson (with, I believe, you driving) and I just had to write.

I grew up on a corn, beans, hog, and cattle farm in northwest Iowa, Cherokee County. My dad had a 1939 8N Ford with over/underdrive. It was a fun little tractor. It would do 20 mph in Third gear Overdrive wide open—that was flying for a tractor! During silage-making time, I would drive that little Ford pulling the loaded wagons into the silage pile and return the empties to the chopper in the field. I would "hot rod" that Ford through the dusty field roads and have a ball. This was long before I was 16 and my first experience with hot rodding.

After several old Fords, Plymouths, and Chevys along the way, I now have a garage-built 1939 Ford Deluxe coupe that Mary Lou, my wife, and I drove to the Street Rod Nationals in Louisville this summer and had a blast. It was our first Nationals where we actually had a car to drive into the show.

So be it, you struck a chord with me when I saw you on that old Massey. I enjoy the magazine every month. Keep up the good work.

Gene Schipper
Anamosa, IA

Gene, yes it was me on the tractor; in fact, I'm getting ready to do some winter maintenance on it right now. I can't believe how many hot rodders have a tractor story in their past (and many have current stories), but it just goes to show the roots of rodding come from many a different direction. SR

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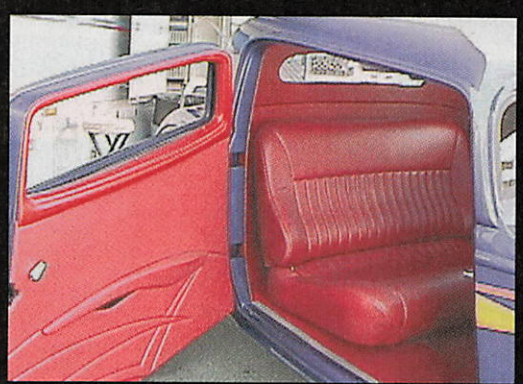
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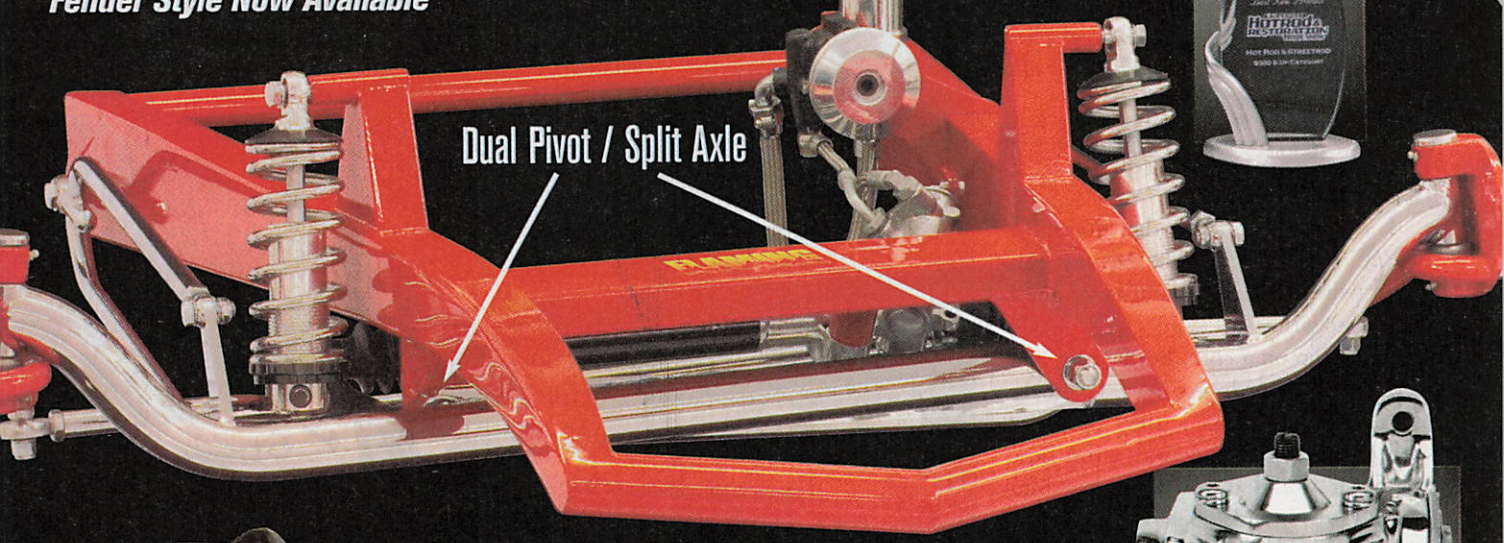

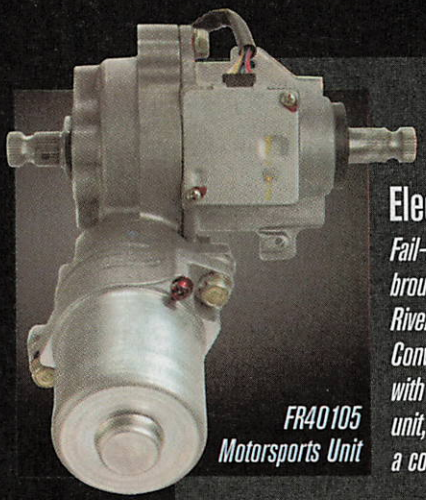

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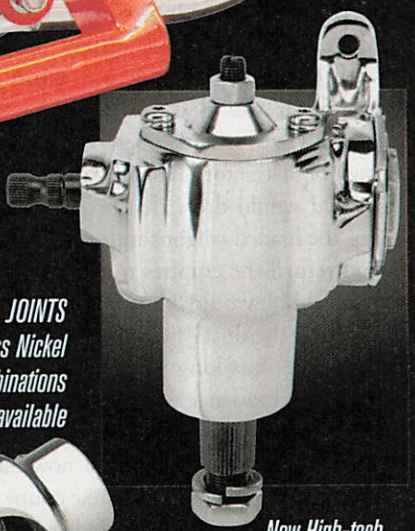

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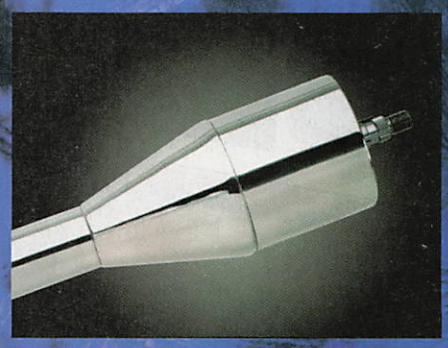
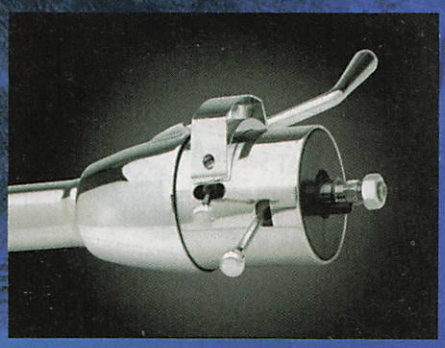


• Floor Shift



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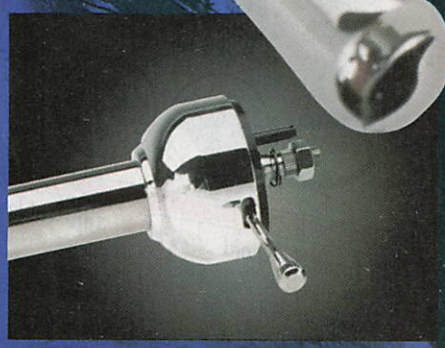

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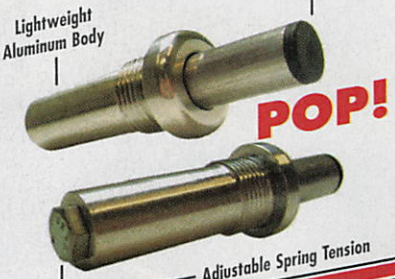

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50-105lbs of adjustable spring tension/travel! Multi-point mounting tip.

AT Series Actuator

12lbs of power, slim & clutch activated. Quiet operation.

Halogen Headlights These headlights feature Omni View Technology to ensure maximum light output.

Replaceable Color Dots!

Available w/ Turn Signals!

Call for a Catalog!

New Showroom Open!

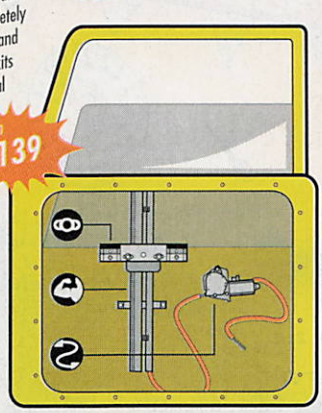
at 201 SE Oak Street, Portland, Oregon 97214 USA

Power Window Kits

NO CUTTING · NO WELDING · BOLT ON

POWER UP! AutoLöc's Flat Glass Power Window Kit allows you to convert your old flat glass windows into a completely new power system. This NEW kit has been redesigned and features a new heavy duty motor. The PW5500 series kits work great in small door shells and tight spaces. Optional remote mounting motor.

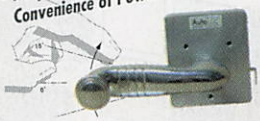
from $139



- Self Adjusting Floating Track
- Reinforced Guide Tracks & Brackets
- Flexible Motors

Electric Window Crank Switch

- Works with Factory Handle!
- No Need to Mount Aftermarket Switches
- Keep Your Factory Look, with the Convenience of Power Windows.



Billet Aluminum Window Cranks

Crank in style! Give your interior a custom, refined look with AutoLoc™ billet aluminum window cranks.

from $58

One Touch Window Unit

Crank in style! Give your interior a custom, refined look with AutoLoc™ billet aluminum window cranks.

Universal Wiper Kit

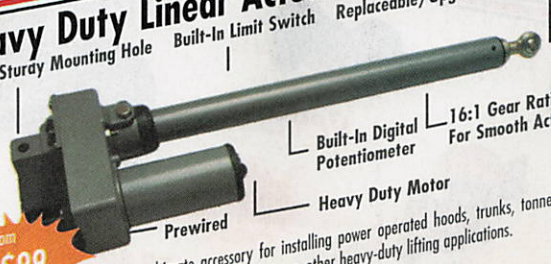
SEE CLEARLY! Its universal design also works great for custom applications or as a replacement for your old outdated system.

- 2 Speed Rotary Switch
- Universal Design
- Heavy Duty Motor
- Easy Plug-In Harness

from $179

Heavy Duty Linear Actuators

Sturdy Mounting Hole · Built-In Limit Switch · Replaceable/Upgradable Tip



Built-In Digital Potentiometer · 16:1 Gear Ratio For Smooth Action · Heavy Duty Motor · Prewired

from $99

The ultimate accessory for installing power operated hoods, trunks, tonneau covers, or any other heavy-duty lifting applications.

Suicide Door Hinges

Do you want to have the ability to open your doors backwards 90°? AutoLöc offers rugged, heavy duty all steel construction with Zero-Flex Hinges and 3/8" hinge pins. Our unique notch design and adjustable mounting holes insures proper door alignment. Self lubricating bushings provide years of trouble free operation.

- Thick/Strong Construction
- Deep Hinge Pockets
- Zero-Flex Hinges
- Adjustable Design

Power Bear Claw Latches

The Power Bear Claw Latch System is a bolt-in kit that will pop your vehicle's door open with the push of a button. Only two wires to power up! All of the features of the Power Bear Claw come in two compact units that will operate two vehicle doors. The kit includes two reliable 13lb AutoLoc™ Actuators, two bear claw latches, and a heavy duty mounting bracket. Available in small or large systems. Includes detailed instructions and a Limited Lifetime Warranty.

- Reliable 13 lb Actuator
- Small or Large Latches
- Heavy Duty Mounting Bracket
- Remote Operation Available
- Limited Lifetime Warranty

from $45

Bear Claw Latches

BUILT TOUGH! Single and double rotary "claw" latch insuring maximum performance and durability. Includes 2 latches and 2 striker bolts.

- 3 Stage Latching System
- Small or Large Latches
- Optional Power Activation
- Heavy Duty Locking Feature
- Installation Kits Available

Trunk/Hood Latches

Ideal for custom applications or replacement of factory latches. Heavy duty construction insures a long life of smooth operation.

Bear Claw Install Kit

These high quality installation kits make Bear Claw latch installation a snap! Available for small and large bear claw latches.

Bear Claw Knob

Operate your latch with ease and style. AutoLoc's Billet Aluminum Bear Claw Knob system will be the focal point of your door panel.

Shop online at WWW.AUTOLOC.COM

FLAME THROWER

FOR OFF ROAD USE ONLY.

Smores Not Included! The exhaust flame thrower kit is a must have for all vehicles. Make up to 20' flames!

UP TO 20 FOOT FLAMES

AURORA SERIES GAUGES BY AutoLoc

MAKE YOUR OWN GAUGE!

AutoLoc's™ Aurora Series Gauges are a revolutionary step forward in gauge customization! Our patent-pending design features full customization of the trim ring, needle, and faceplate - a first in the world of gauges. Design and print your own faceplate, choose your custom needle and trim ring options, and you're ready to go! In addition to great customizing options, available gauges include : **Speedometer, Tachometer, Oil Pressure, Fuel Level, Water Temp, Quartz Clock, Turbo Boost, Volt, Amp, or MAKE YOUR OWN!**

Flush Mount Antenna Kit

Get the shaved antenna look while still have the best reception possible! Billet tip can be sanded to body contour.

Power Antennae

The AutoLoc™ Power Antennae offers the ultimate reception at a very affordable price. The heavy duty motor ensures optimal performance and a lifetime of trouble-free operation.

Hidden Antennas

GET CRYSTAL CLEAR RECEPTION! AutoLoc™ Antennas offers the ultimate reception at a very affordable price.

Seat Belts

- Available in 2 Point, 2 Point Retractable, 3 Point Retractable and 4 Point Racing Harnesses
- Easy Push Button Release
- Several Factory Colors Available
- CAD Designed for Insured Safety
- OEM Style Fabric

Hundreds of Colors

from $19

3 pt Retractable

2 pt Retractable

2 pt Lap

Motorized Cowl Vents

Can be used to motorize your cowl vents, open hinged panels for stereos or reveal hidden compartments. The ideas are endless! Includes detailed instructions.

High Powered Horns

We carry a large array of electric and air powered horns. All horns work great for 12 volt trucks, imports, hot rods or any project you are building. All feature rugged construction, easy mounting and detailed instructions.

KEEP IT CLEAN™ wiring accessories

www.keepitcleanwiring.com

Wiring Made Simple!™

Wiring Panel Systems

WIRE IT UP! Keep It Clean™ Ultra Small Wire Systems offer an easy to install design and expandability for future growth. Only the highest quality wire and parts resulting in the "ultimate" kit. Includes dedicated circuits for keyless entry, power windows, seats, additional 12v output, and optional accessory output. Deluxe kit includes a headlight switch, ignition switch, dimmer switch and more!

Pre-Tested Before it Leaves Our Plant
32/38 Terminal
Pre-Terminated Fuse Block with 14/20 Fuses with Easy to Read Fuse Box Cover
High Quality Labeled Wire
Heavy Duty UL Wire
Easy Plug-In Harnesses
GM Color Codes
Complete Kit Includes Everything You Need

PLUG N PLAY

GM Color Coated & Labeled Wires

LIMITED LIFETIME CERTIFIED. WARRANTY

From $149

Switches

from $9.99

Battery Kill

Features 6-36 Volt Range, 190 Amps of continuous power, and 1,000 Amp rush in current capability.

from $19.95

No Load Flashers

CONVERT TO LED! Great for LED taillights! Plugs directly all fuse panels. Features fully adjustable speed control.

ADJUSTABLE BLINKER!

Billet Door Loom

HIDE THOSE WIRES! Great for our power window kits, shaved door kits or custom stereo installs.

EXPANDABLE!

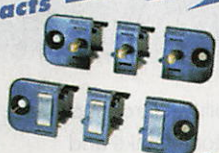
Battery Disconnects

DISCONNECTED! Available in standard, heavy duty and remote battery disconnect kits.

BEST!!!

Modular Door Contacts

GET CONNECTED! Perfect for eliminating the wires that come with mounting power accessories in your door. Modular design allows for quick and easy expandibility.



*Patent # 6797900

BETTER!!

Light Bolts

BRIGHT BOLTS! Great for illuminating your license plate! Wires directly into factory lighting circuit on most vehicles.

Adjustable Brake Light Switch

BEST SELLING BRAKE SWITCH ON THE MARKET! More adjustment points than any other brand. Heavy duty design, works on all vehicles and Limited Lifetime Warranty.

Adjustable!

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Lifetime Warranty!

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Zirgo's High Performance Cooling Fans provide maximum performance into a minimum amount of space. High torque motor, sealed ball bearings and fully balanced, reversible blades.

Available in Chrome!!!

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Digital Adjustable

Monitors Air or Liquid!!!

NEW Fiberglass Sensor!

Great for engine compartments, glove boxes, radio/amp enclosures, and much more. Zirgo's digital temperature probe allows you to monitor those hard to reach areas, or even coolant temperature! Activation temperature from 0° F. to 240° F.

Adjustable Standard

Set the temperature you want your fan to kick in. 180° F. to 240°F.

Works With All Fans!

Overflow Tanks

Zirgo™ Polished Overflow Tanks are made of corrosion-resistant aluminum and tanks are available in various sizes to cater to your needs. The polished finish makes them great for show cars, hot rods, and dressed up engines.

NEW!!

Ultra Hose Kits

Radiator & Heater

Features a strong corrugated structure that will not collapse or crack like typical rubber radiator/heater hoses. Available in 4 lengths; 12", 24", 36", & 48".

From $45

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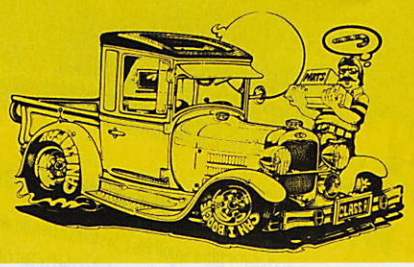

BY BRIAN BRENNAN | brian.brennan@sourceinterlink.com

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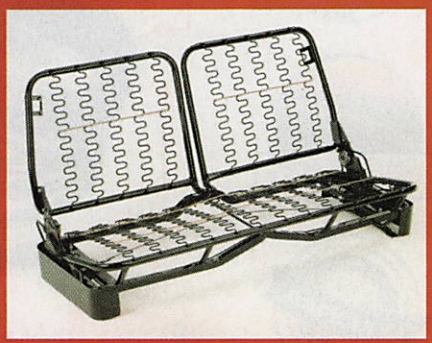
HEADS UP

Classic Instruments' Ultimate Speedometer is the easiest yet to set up—just set it once on a running, real-time mile, then fine-tune the calibration with the push of a button. This speedo is operation ready with all known electronic speedometer sender signals. The electronic 7K tach works with 1- up to 14-cylinder engine output signals. The Ultimate Speedometer is a 3 3/8-inch version of the company's larger Speed-Tachular combo gauge. The Ultimate Speedometer includes an odometer and comes with its own plug-in harness. These American-made gauges are in stock and ready to ship in six standard face designs, and carry a full five-year warranty.

Classic Instruments
800-575-0461
www.classicnstruments.com

SITTING TIGHT

Glide Engineering announces several new seat editions. These new seats not only allow you to replace a missing or broken seat, but also allow you to securely ride in comfort with style. And almost all of these new seats will bolt in to the factory locations. These seats feature all-steel construction, non-sag springs, reclining and tilting positions (most applications), powdercoated finish, and come ready to upholster. Skip the swap meet and wrecking yard excursions and order a brand-new seat today.



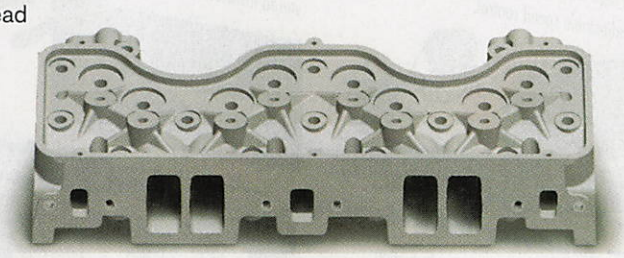
Glide Engineering
909-944-9556
www.glideengineering.com

Each of Glide's six latest creations is available for the following applications:'41-46 Chevy pickup bench seat; '49-53 Chevy coupe and sedan front seat; '49-51 woodie front seat; '49-51 woodie second seat; '49-51 woodie third seat; and the '41-46 Chevy pickup riser.

SHE'S SO FINE, AND SHE'S BACK

Edelbrock announces the rebirth of the Performer RPM Cylinder Head for 348-/409-/427-cid W-series Chevrolet big-blocks.

After nearly 50 years without a reliable street-performance A356 aluminum cylinder head available to 348/409 enthusiasts, Edelbrock introduces the Performer RPM 348/409 complete and ready to bolt on (PN 60819), or bare (less valves, springs—PN 60809).



Like all Edelbrock aluminum Performer RPM heads, these are designed to produce exceptional horsepower and torque in the 1,500-6,500—rpm range. Edelbrock engineers designed the 348/409 RPM head with a 7/16-inch stud and guideplate setup, allowing for full valvetrain adjustability. Hardened pushrods and stud-mounted rocker arms are required. Additional features include stock intake and exhaust port locations, stock valve cover rail height, and stock valve angles for simple and effective use.

Edelbrock Corporation
310-781-2222
www.edelbrock.com

Features include: A356 aluminum casting with 5/8-inch-thick deck; 220cc intake port volumes; 90cc exhaust port volume; 2.190-inch stainless steel intake/1.72-inch stainless steel exhaust valve combo; maganese bronze valve guides and ductile iron interlocking valve seats; and Helicoil inserts in critical areas, including rocker stud and exhaust flange bosses.

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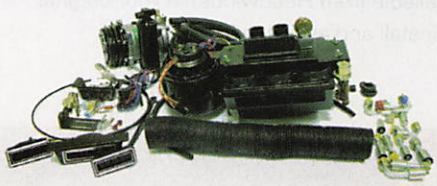


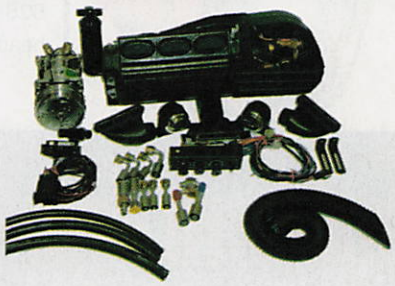
ALL NEW! MAXI Kooler I

All Maxi Koolers have Heat, Air Defrost and Floor Heat.
8 1/4" x18 1/4"-8" depth

- Unit only with controls, hoses and vents **$339.00**
- Complete Kit From A To Z, ... **$739.00**

Retro Mustang Style A/C & Heat Unit with Ducts & Vents

PT# 090-00561 (A/C & Heat Unit Only)..... **Only $279.00**
PT# 090-00561K (Complete A to Z Kit)..... **Only $679.00**



MAXI Kooler II All Electric

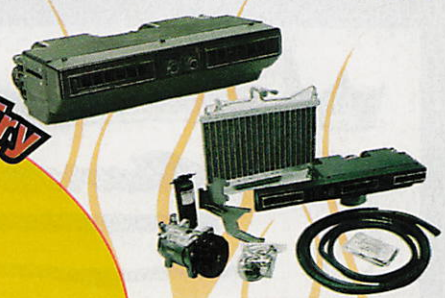
Our High Performance Model 9 1/2" X 23"-7 3/4" depth

- Unit only with controls, hoses and vents **$359.00**
- Complete Kit From A To Z, ...**$799.00**

World's 1st ever ALL Electric "No Vacumn" MAXI III A/C Heat, Defrost, and Floor Heat

Measures 24.5" x 10" x 10".

- Unit only with controls, hoses and vents **$429.00**
- Complete Kit From A To Z **$829.00**



We Lead, They Follow, or Try

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The First to give you the All Electric No Vacuum A/C Units is now giving you a FREE Chrome 508 Compressor With Each Complete Kit.

Our Trim Line Air Unit or Southern Air Econo Kooler

Econo Kooler underdash unit–Heat& A/C, New 508 Compressor, Compressor Mounting Bracket (Alan Grove), Hose Kit with Drier & Fittings, Condenser, Heat Control Valve with Cable Heat & A/C. Everything you need!

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Fan Thermostat Switch

Water temp. operated, adjustable switch, screws into radiator drain cock.

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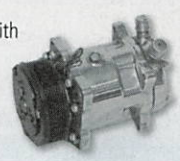
Compressors

New and not rebuilt. Available with V-belt or serpentine pulley.

- Plain, 134A or R-12**$175.00**
- Polished **$210.00**
- Chrome.....**$199.00**
- Polished Snout cover **$35.00**



Custom "O" Ring Aluminum Bulkhead Kits

Complete with all fittings, hardware and instructions ready for installation. No chasing parts. Also available in straight or 90° fittings.

- 4-Way Kit Complete w/Fittings **$89.95**
- 4-Way Bulkhead Only.....**$59.95**
- 2-Way Kit Complete w/Fittings **$49.95**
- 2-Way Bulkhead Only **$29.95**

Wrap-A-Round Polished Compressor Hardlines

Simply crimp on and go

- w/134A Service Ports ....**$35.00** pair
- w/o Service Ports.....**$29.95** pair

Southern Air Hot Rod Heater

7" all metal with 2-speed fan and 3 working doors.
Pt# 841H **$109.95**

Super Frost Condenser

Available with removable hard lines. All are power coated. Can be used with the 134A and R-12 refrigerant. Comes complete with all necessary hardware and instructions for easy installation. Condenser **$79.95**

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ROS_0307_SR

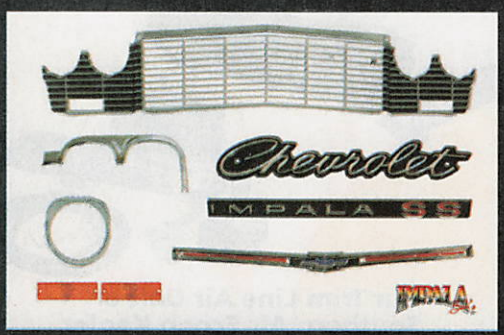
BRIGHTEN UP YOUR MODEL A

Dim headlights? Headwinds introduces its Ford Model A headlight adapter ring that solves the problem. Installing bright H4 bulbs is not the solution because your original lens with big rounded flutes scatter the light beam. Headwinds' adapter rings allow you to use any 7-inch lamp (available from Headwinds) in your original housings. They're easy to install and available for other cars.

Headwinds
626-359-8044
headwinds@headwinds.com

HARD TO FIND

Impala Bob's introduces a high-quality reproduction grille for the 1965 Impala, Impala SS, Caprice, Bel Air, and Biscayne. Manufactured of anodized aluminum, the grille has the correct black paint around the headlights and turn signals, and is offered at an introductory price of $499.99.



In addition to the grille, Impala Bob's offers several other '65 Impala front trim pieces to complete your restoration, including: Headlight bezels, set of four, $199.99; eyebrow molding, left and right side, $79.99 each; Chevrolet script grille emblem, $59.99; Impala SS grille emblem, $89.99; and hood emblem assembly, $109.99; turn signal lenses, pair, $39.99.

Impala Bob's
800-467-2527
www.impalas.com

STOP THAT

SoffSeal Inc. announces the manufacture of the 1965-70 Chevy Impala Automatic Brake Pedal Pad (PN 2064).

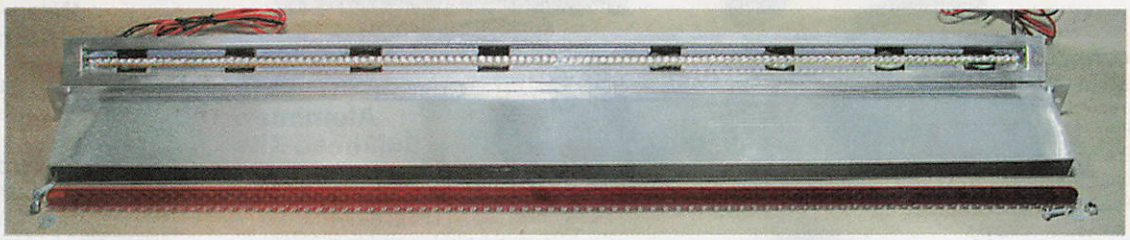
This product offers an easy way to give your vehicle the protection and detail it deserves, and it's made with SoffSeal's signature attention to detail. The new in-house manufacturing of this part allows for better pricing and availability.

As always, all SoffSeal products are backed by the company's 100 percent lifetime satisfaction guarantee.

SoffSeal
800-426-0902
www.soffseal.com

STRAIGHT AND NARROW

Watson's StreetWorks has conjured up an incredible one-piece flush-mount LED taillight kit with a whopping 120 super-bright LEDs. The LEDs are dual intensity for taillights and brake/turn signals and pre-mounted in an aluminum housing. The sleek red lens with attached diffuser measures 30 3/4 inches long by 1/2-inch wide for a smooth, uninterrupted look. This kit works in surfaces with gradual curvatures up to approximately 2 1/2 inches. Watson's also includes an aluminum "spacer box" to fill the gap created by body curvature and to seal out dirt and water.



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www.watsons-streetworks.com

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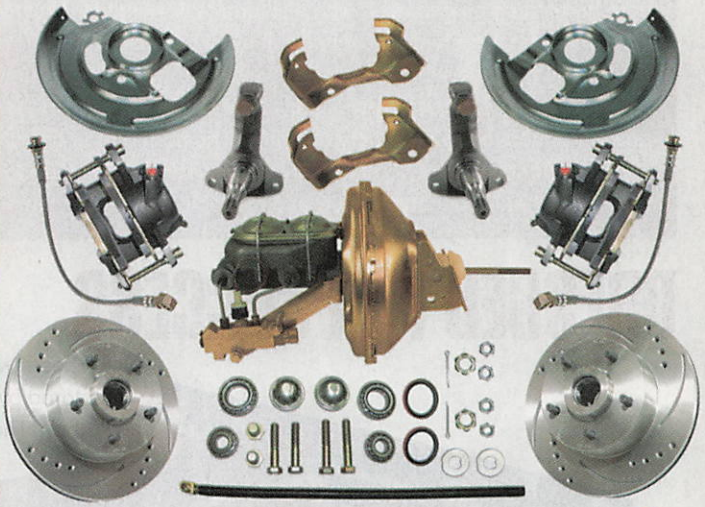

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- ☑ Fast turnaround
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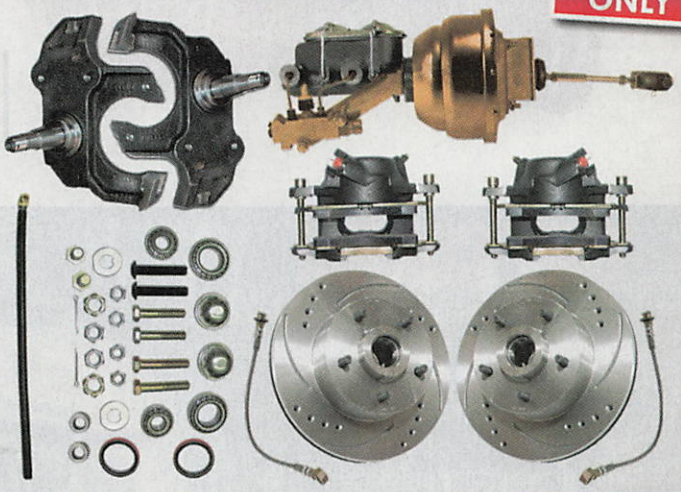
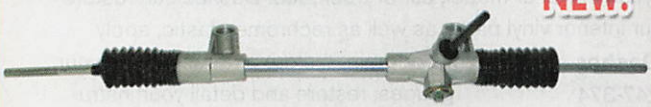
- ☑ Marketing tools
- ☑ Product samples
- ☑ Plain, unbranded packaging

1955-64 Full Size Chevy Stock
Height & 2" Drop Disc Brake Kits

DEALERS ONLY

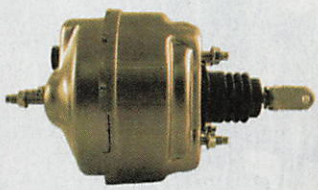


Mustang II Manual Rack & Pinion NEW!



Mopar B-Body 1962-72 & E-Body 1970-74
OEM Upper Control Arms

Restoration Parts NEW!



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Double Diaphragm

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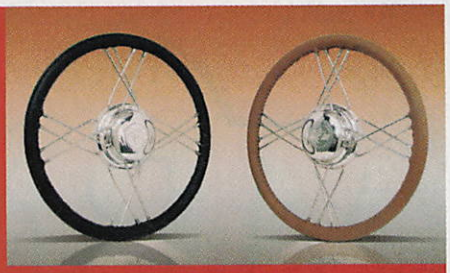
DOUBLE CROSS



Longtime hot rodder and wheel industry veteran Don "Sasquatch" Ripley has gone out on his own and formed Innovation Alley, based in Clovis, California. The company's first offering is a unique steering wheel called the Double Cross 16.

The steering wheel features a 15 5/8-inch-diameter billet aluminum ring that is wrapped in black, tan, or gray leather and meticulously stitched. The hub is likewise CNC-machined from 6061 billet aluminum and then polished. A companion polished billet aluminum horn button comes engraved with a unique "V8" emblem. The 16 spokes are motorcycle-style stainless steel, also polished. The wheels fit most popular five-bolt wheel adapters.

Innovation Alley
559-285-9750
www.innovationalley.net

A number of available options allow street rodders to customize the Double Cross 16-inch steering wheels to their own specifications. These include getting the hub and horn button anodized or powdercoated in a wide variety of colors. The horn button can also be custom engraved.

Each Double Cross 16 steering wheel is individually made to order and hand-assembled in Innovation Alley's facility. The standard wheel is priced at $499 and available direct from the manufacturer.

DRESSED FOR SUCCESS

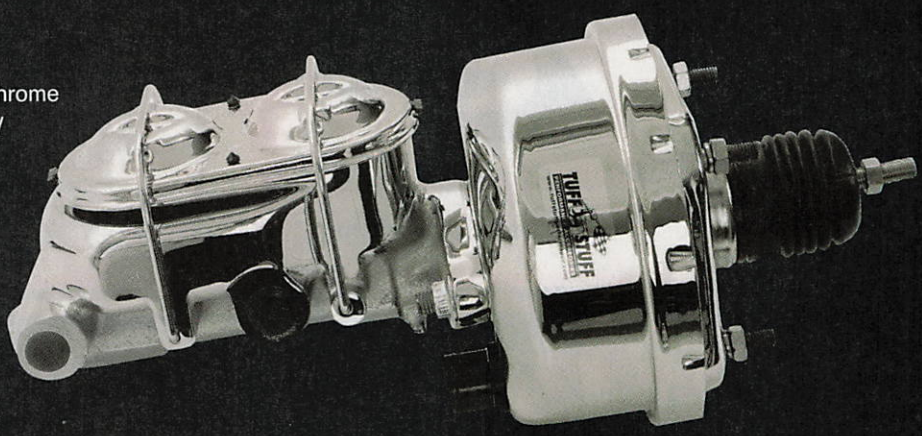
These two-tone red panels for the '67 Biscayne door panels can be restored by Just Dashes.

There are two different dielectrically stamped designs applied to the stock Madrid grain vinyl, along with three silver Mylar inserts. Just Dashes has exactly matched the original factory red hues, producing the concours-quality restoration of both the front and rear panels. New chipboard backing is created and the new vinyl surface applied for the perfect interior restoration. Regardless of year, make, or model, car or truck, Just Dashes can restore all your interior vinyl parts, as well as rechrome plastic, apply woodgrain, restore and recalibrate your gauges, restore and detail your instrument cluster, and almost any other interior restoration service required.

Just Dashes
800-247-374
www.justdashes.com

TUFF COMBO

Featuring hand polishing and triple chrome plating, Tuff Stuff's power brake booster/master cylinder combos provide the ultimate in looks and performance. All units are vacuum-tested to ensure reliability and are assembled in Tuff Stuff's USA factory by experienced craftsmen who know quality inside and out.



They work with many stock bracket setups and fit disc/disc and disc/drum applications in both OEM and universal applications with 1- and 1 1/8-inch bore sizes with both dual ports and driver-side ports. Pedal rod extension kits are also available for your custom installations.

Tuff Stuff Performance Accessories
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www.tuffstuffperformance.com

Technology In Motion...

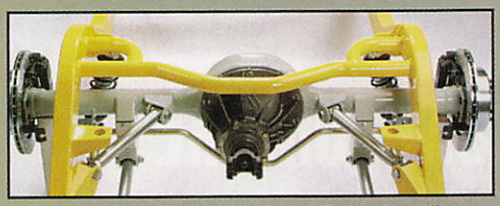
Get A Contemporary Ride And Handling For Your Tri-5 Chevy or C1 'Vette With A GT-Sport Chassis From Art Morrison Enterprises

MORRISON GT SPORT CHASSIS

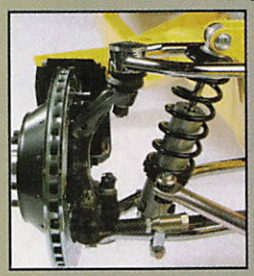
Our own "Project GT55" Chevy, a Goodguys "Street Machine of the Year" finalist, recorded the following at a Super Chevy magazine documented track test:

- **Skid Pad: .94 Gs (2-way average)**
- **1/4-mile: 12.63 (116 mph speed)**
- **Slalom: 49 mph (70' cones)**
- **Braking: 132 ft. (60-0 mph)**

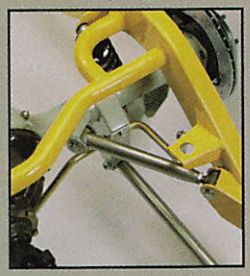
The car is powered by a 427" World Motown small block crate motor and used BFGoodrich street tires.



Tri-5 chassis features rear sway bar and Strange Eng. coil-overs



Tri-5 CAD-engineered I.F.S.



Tri-5 Triangulated 4-bar

TRI-5 CHEVY

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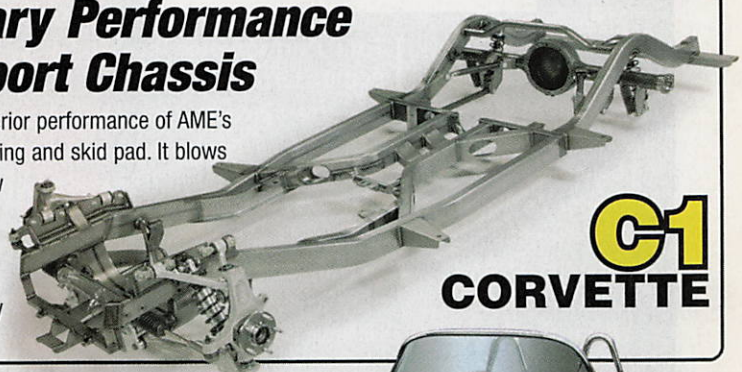
- *Bolt-in replacements for 1953-62 Corvette & 1955-57 Chevy*
- *Frame includes bumper and body mounts, plus core support*
- *Little or no welding required —perfect for do-it-yourselfers*
- *Provides awesome handling, great acceleration & comfortable ride*
- *Accommodates all popular automatic & stick-shift transmissions*
- *Power rack & pinion steering (choice of 15:1 or 20:1 ratios)*
- *Mounts for small block or LS Chevy (plus big block in Tri-5)*
- *Tri-5 features Computer-designed I.F.S. with Strange coil-overs*
- *C1 uses C6 Corvette forged aluminum control arms with coil-overs*
- *Both have 9" housings with triangulated 4-bar rear suspension*
- *Exhaust passageways in frame provide superior ground clearance*

Give Your C1 'Vette Contemporary Performance And Handling With AME's GT Sport Chassis

Art Morrison's award-winning "3G" 1960 Corvette has demonstrated the superior performance of AME's GT-Sport chassis by exceeding 1G in three measured tests: acceleration, braking and skid pad. It blows a new Z06 into the weeds. You can virtually "feel" the performance in the new version of Sony's hit video game, Gran Turismo, or check out the videos on our website. If you don't own a C1, but like the idea of a street machine with classic Corvette styling and contemporary performance, use the GT-Sport chassis as the foundation for an awesome scratch-built car —there are many firms offering body kits for 1953-55, 1956-67, 1958-60 and 1961-62 styles.



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From Surf City Garage comes the company's detail pack that provides everything needed to wash, wax, and detail your ride.

The Perfect Shine from Surf City Garage includes Pacific Blue Wash & Wax (8oz bottle), Barrier Reef Carnauba Wax (8oz bottle), and Speed Demon Wax Detailer (24oz spray bottle), plus two Nano-Detail Microfiber Polishing Cloths, all in a custom illustrated box for just $39.99.

Surf City Garage
866-970-7873
www.surfcitygarage.com

MOUNT UP

Total Performance Inc., a company long known for its 1923-34 Ford street rod kits, now offers universal Chevrolet and Ford engine and transmission mounts.

The universal engine mounts are adjustable from 21 1/2 to 32 1/2 inches, and the universal transmission mounts are adjustable from 25 to 30 inches.

Total Performance Inc.
800-243-6740
www.tperformance.com

For those of you looking for the most amount of ground clearance as well as easy access to your oil pan, Total Performance offers a side-style motor mount just like the ones used in the early Chevy and Flathead engines.

Also, rounding out the available products are rubber and polyurethane engine and transmission pads, as well as stainless steel mount covers.

Total Performance's complete 140-plus-page catalog is available for $10 (includes shipping & handling), which outlines all of the company's kits and products.

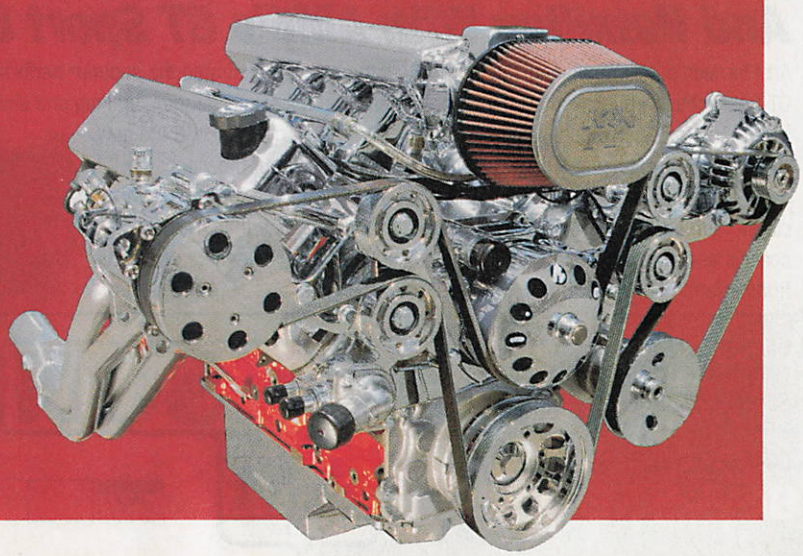
TURNKEY FROM TURN KEY

Turn Key Engine Supply introduces its latest LSX series of high-performance engines available in naturally aspirated, turbocharged, and twin screw supercharged applications, with output ranging from 650 to a whopping 1,400 hp, providing a wide array of power and torque, and a variety of applications.

Displacement of the new Turn Key LSX Series ranges from 427 to 486 ci, with engine packages designed for street, strip, and sand. And since every Turn Key engine is custom built to your specifications, you get exactly what you want. This includes the crankshaft, connecting rods, pistons, cylinder heads, camshaft, and compression ratio.

Each engine package also includes an electric fuel pump, fuel filter, fuel regulator, complete serpentine system, pre-wired computer and harness, and much more. In addition, each engine package includes the patented Turn Key Engine Supply five-wire system that ensures an easy installation. Turn Key Engine Supply supplies custom-built LS1, LS2, LS6, LS7, LSX, and Ecotec crate engines. Each engine features a state-of-the-art Delphi ECM with a Turn Key precision-engineered calibration. SR

Turn Key Engine Supply
760-941-2741
www.turnkeyengine.com



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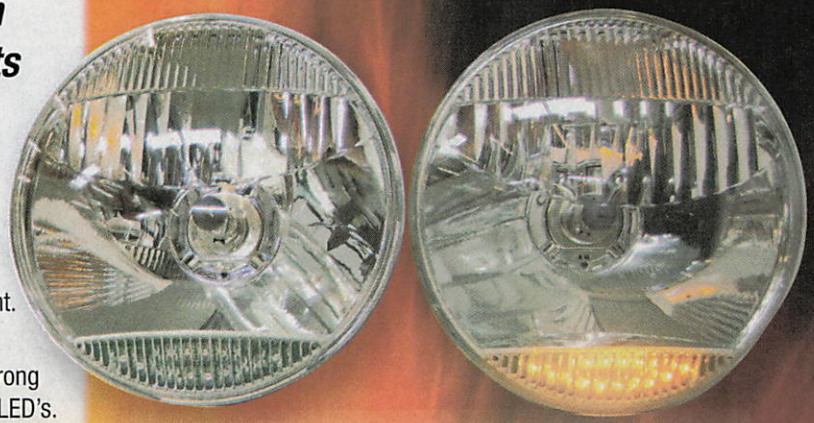
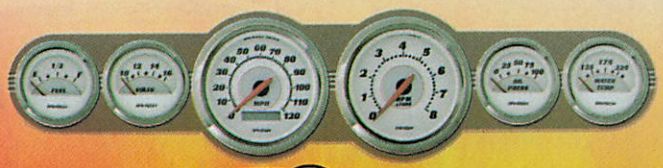
A DIVISION OF TPI TECH

Halogen Headlights *with built in LED turn signals/park lights for standard headlight buckets*

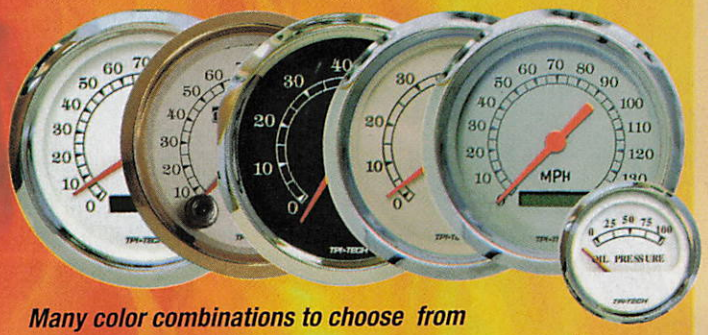


- Replace your old style sealed beam H6024 bulbs with new 7" Halogen Headlights.
- ***H-4 Halogen Bulbs*** have built in ***high beam/low beam LED turn signals and park light capabilities.***
- ***Crystal reflective backing*** shoots a straighter beam of light.
- The ***clear turn signal lens*** gives a more original look.
- ***Installation is a Snap!*** Bulb plugs into a regular three-prong connector. Follow the instructions on how to wire up the LED's.

Why buy cheap headlights, when for a little more you can have higher end headlights that offer a straighter beam of light, an original look, built in turn signals, and an easy installation. ***Only $175 per pair***



TPI TECH INSTRUMENTS ***New Redline Series with programmable speedometer***



Many color combinations to choose from

Five gauge mech.	$163	Five gauge prog.	$217
Six gauge mech.	$193	Six gauge prog.	$247
5" quad w/prog. speedo	$288	3-3/8" quad w/prog. speedo	$248
Quartz Clock	$49		

Quads have white, tan or black faces with red pointers

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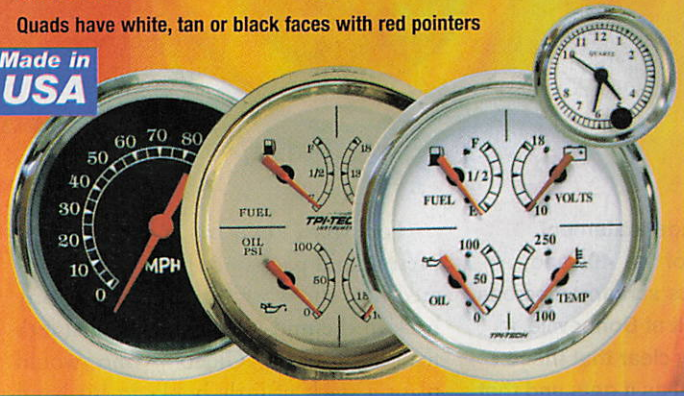
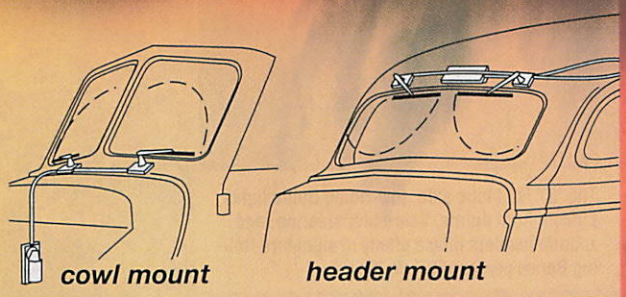
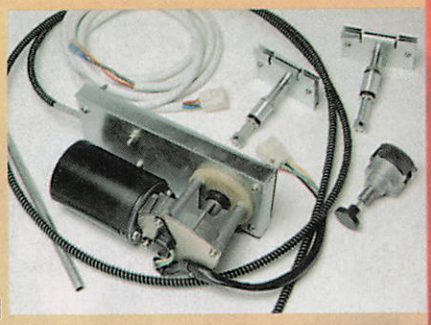




NEW Electric Wiper Kit



- Dual or single wipe
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- Mount to top or bottom of windshield
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- Remote two speed motor can be mounted behind kick panel or in roof up to 6-1/2 feet away
- Ask about our free two speed wiper switch

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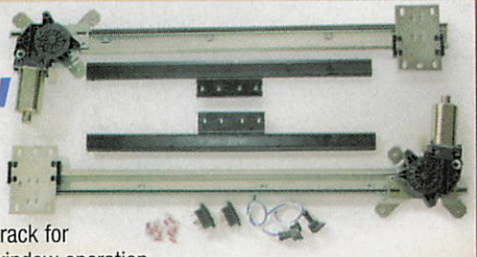

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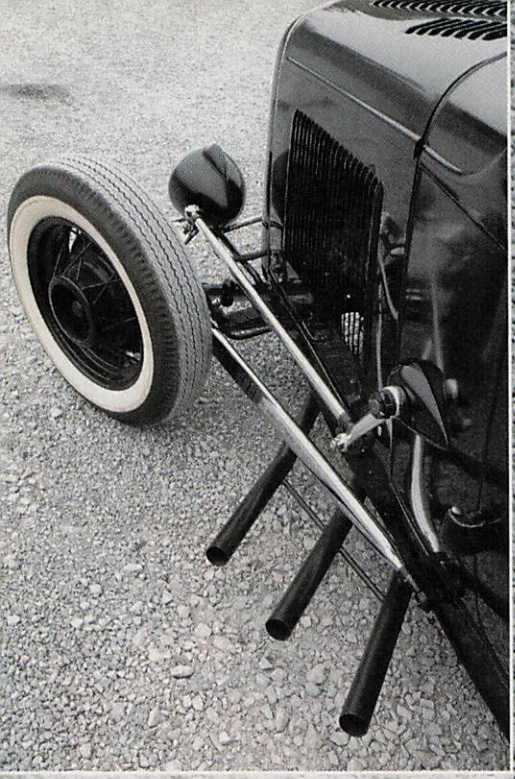


A Lesson from the Book of Gow

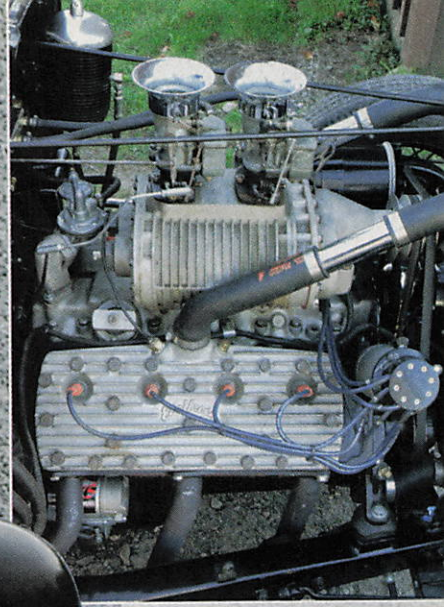
BY CHUCK VRANAS

The '37 Ford tube axle, low-riding Guide lights, Lincoln front drums, Schroeder steering, and zoomie headers infuse plenty of signature Rolling Bones personality into the mix.

It seemed fitting that the road trip to shoot Mike Manno's new Rolling Bones–built Deuce Tudor start off on a spine-chilling late fall morning, long before the sun would ever come up. To say that the cars built at this little shop in upstate New York are unique would truly be an understatement. Evolving from spirit of the '40s and '50s, where Flatheads screamed across the dry lakes and salt at Bonneville, it becomes immensely clear that these cars are as individual as it gets and that each one possesses its very own soul.

For Mike, time has moved on at a pretty rapid pace since he was first initiated into the world of hot rodding way back in the mid-'60s by his older sister's fiancée, Richard Gideon, who would plant a stack of little books in his hand and hope he got the hint. It wasn't a hard

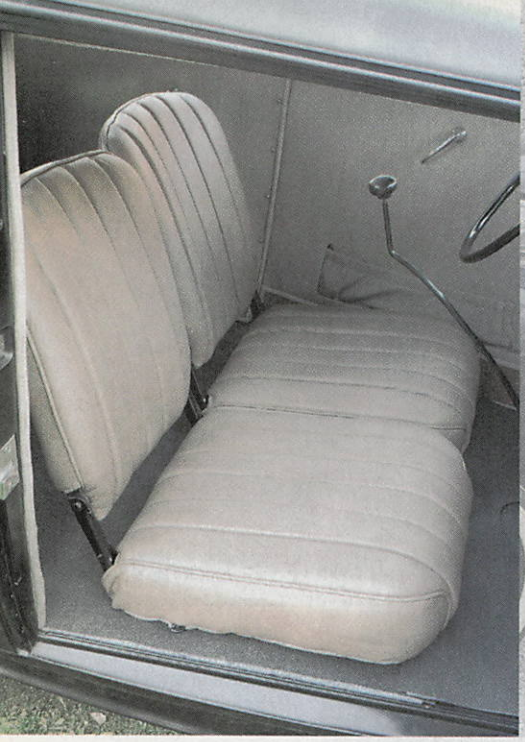
mike manno's deuce tudor is a throwback to a bygone era

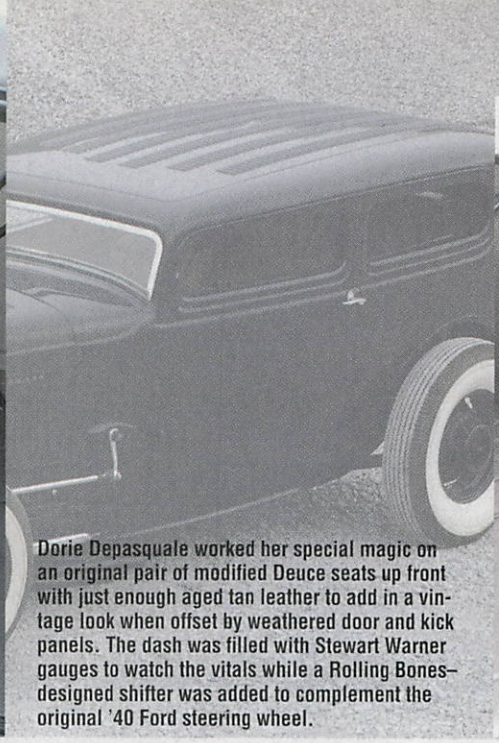


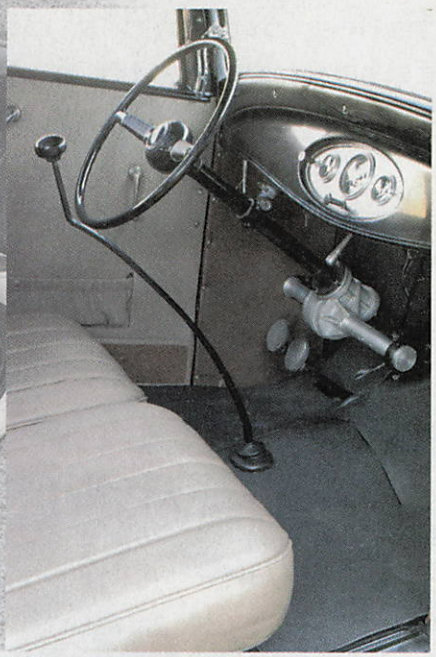
You can bet this Deuce lets everyone know it's in town with 276 ci of blown Ford Flathead V-8 on tap! Filled with a 4-inch Merc crank and an Isky stick, the block was topped with vintage Edelbrock heads that catch their breath once the Vertex magneto is lit.

STREET RODDER

sell, and soon after Mike would tear into any printed matter he could get on the subject, worshiping cars like the *Orange Crate* to this day (easily proving that he had a good eye for the wicked cool stuff). While in his teens and twenties, Mike wrenched on a few vintage steel projects, but it wasn't until a chance meeting with Roy Brizio at the Nationals in '95 that his life changed forever. Having purchased a gennie Deuce roadster body and chassis in the mid-'80s, his time spent with Roy not only launched the design and build of his first Deuce at the well-known builder's shop, it was also the start of a great friendship. As the years continued to pass, Mike collected a dream garage full of Deuces, including a roadster and three-window coupe built by Joe Mead that were untouched in style since they first hit the street.



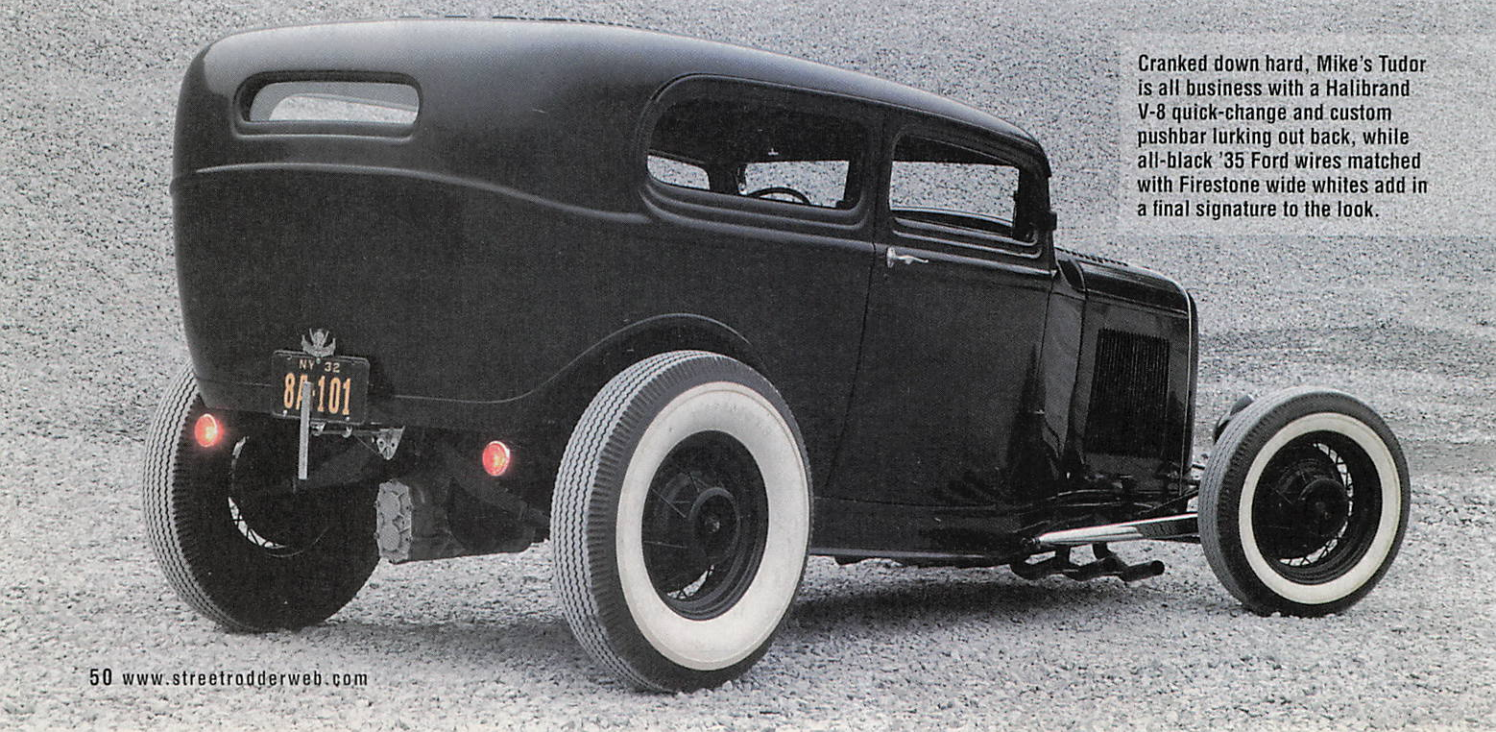




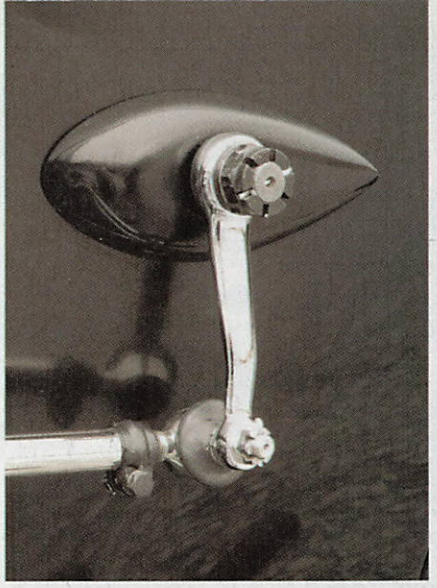
Dorie Depasquale worked her special magic on an original pair of modified Deuce seats up front with just enough aged tan leather to add in a vintage look when offset by weathered door and kick panels. The dash was filled with Stewart Warner gauges to watch the vitals while a Rolling Bones–designed shifter was added to complement the original '40 Ford steering wheel.

Being from New York, and also being a diehard traditional hot rodder, it wasn't long until Mike heard about the little barn in Greenfield Center that housed the Rolling Bones Hot Rod Shop and the notorious cars that were coming out of its confines. He joined up with the crew in 2003 and made the journey out to Bonneville—and that was all it took for the haunting light to dawn that he had to have these guys build his next Deuce for him. Talking with Roy not long after his return, he was told of a mint Tudor body that had just come up for sale. Mike bought it and had it shipped back at almost the same time as Dennis Varni's Tudor was being debuted at the shop's winter open house.

The crew got busy designing one of their signature spines to act as a rock-solid base for the car to rise from. The welders were brought into action with a set of Henry's 'rails, beginning with a pinch up front and a bob out back, while Model A crossmembers were added to the mix along with a fresh Brookville X-member. A '37 Ford tube axle was located and matched up with a pair of '32 Ford split bones, '39 Ford spindles, and inboard mounted Houdaille rear shocks for front suspension duties. A POSIES front spring was added to keep it all smooth while plenty of whoa is compliments of early Lincoln drums, and a Schroeder steering unit keeps everything heading in the right direction. Out back, nothing says hot rod better than a pair of '40 Ford axles mated to a vintage Halibrand V-8 combined with '40 Ford binders, a Model T spring, and Houdaille shocks. For a primitive, almost raw feel, the car rolls on all-black '35 Ford wires shod with Firestone wide whites that boast a 50-year-old look even though they are fresh units.

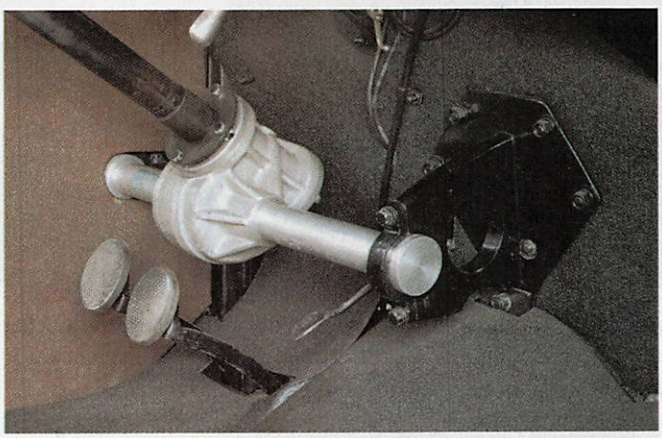


Cranked down hard, Mike's Tudor is all business with a Halibrand V-8 quick-change and custom pushbar lurking out back, while all-black '35 Ford wires matched with Firestone wide whites add in a final signature to the look.



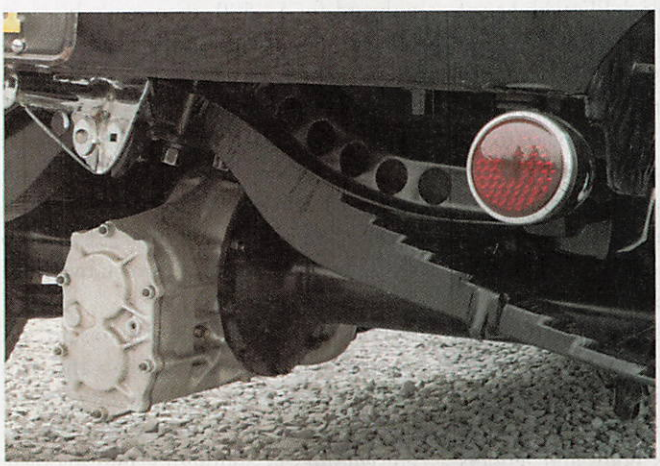
There is lots of nifty metalwork on the Tudor, evidenced by the cowl blister and stylish pitman arm.

Deciding on the right power source for the Tudor was easy since nothing would fit the bill better than a blown Flathead. Adding a bit of spookiness to this chapter of the build, a vintage Flathead was located that had been long forgotten in a dimly lit basement that happened to have just the right sum of the parts needed. Stroked to 276 inches, it was filled with a 4-inch Merc crank, Isky stick, and genuine Edelbrock heads. For the icing on the cake, Mike added an Italmeccanica Supercharger with twin Stromberg 97-series carbs sucking air through a pair of short air horns. The Deuce would have no problem getting the power to the road linked to a Chevy S-10 five-speed box. Cutting up one of the nicest original Tudor bodies they had ever seen, the team did the old Detroit steel justice with a proportionally perfect chop that gave the car a personality that will last a new lifetime. It was then doused in a vat of PPG Midnight Black lacquer that was then patina'd to look like the original gloss was ready for Social Security. For the final touch, Dorie Depasquale of Gloversville, New York, was handed the reins to work her magic with just enough aged tan leather to complete this masterpiece.



The Schroeder box and early pedals tell you all you need to know about the "fun factor" in this hot rod.

Riding shotgun in the car with Keith Cornell of Rolling Bones during a shakedown run proved this Deuce's ferocity matched its velocity once the mag was lit, bringing its snarling blown Flathead to life. Seeing the smile on Mike's face as the car shot past the shop was priceless, and it proved his dreams for one of the most wicked Tudors to ever roll had been reached. SR



There's nothing like an Italmeccanica Supercharger with a pair of 97s riding shotgun to seal the deal.

A Halibrand V-8 quickie is fitted with 3.55:1 gears, while a Model T spring and custom split 'bones, Houdaille shocks, and '40 Ford rear brakes are used.

FACTS&FIGURES

Mike Manno
Cooperstown, New York
1932 Ford Tudor

CHASSIS

Frame / Manufacturer	stock / Ford
Wheelbase	107 1/2"
Modifications	shortened & pinched in front, Model A crossmembers, rear wheels moved back 1/2", front & rear horns bobbed, all by Rolling Bones Hot Rod Shop (Greenfield Center, NY)
Chassis plumbing	steel
Rearend / Ratio	Halibrand (Wellington, KS) V-8 / 3.55:1
Rear suspension	custom split bones, Houdaille shocks & Model T rear spring
Rear brakes	40 Ford
Front suspension	'37 Ford stock tube axle, split '32 Ford bones, '39 Ford spindles, inboard mounted Houdaille rear shocks & POSIES (Hummelstown, PA) spring
Front brakes	Lincoln
Master cylinder	'40 Ford
Steering box	Schroeder (Burbank, CA)
Front wheel make, size	'35 Ford wire, 16x4
Rear wheel make, size	'35 Ford wire, 16x5
Front tire make, size	Firestone, 500-16
Rear tire make, size	Firestone, 750-16
Gas tank	aluminum 25-gal. mounted behind rear seat

ENGINE

Make	'48 Ford 59A Flathead V-8
Displacement	276 ci
Machining / Assembly	vintage era / unknown
Crankshaft	Mercury 4"
Camshaft	Isky (Gardena, CA) Jr. 400
Water pump	early Ford truck
Cooling fan	Walker (Memphis, TN), electric
Radiator	Walker
Alternator	Powermaster (Knoxville, TN) PowerGEN
Heads	Edelbrock (Torrance, CA)
Valves / Springs	Isky
Lifters	Johnson (Romulus, MI) adjustable
Manifold / Induction	Italmeccanica / Italmeccanica Supercharger w/ twin Stromberg 97-series carbs
Ignition / Wires	Vertex (Grandview, MO) / Taylor (Grandview, MO)
Headers	1 3/4" zoomies
Other engine facts	block deburred

TRANSMISSION

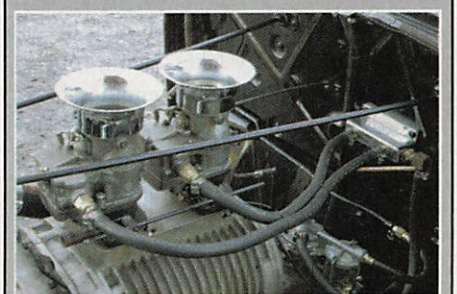
Make	Chevrolet S-10 five-speed
Clutch disc	10"
Pressure plate	Ford aluminum
Shifter	custom by Rolling Bones Hot Rod Shop
Driveshaft	custom

BODY

Body style / Material	Tudor / steel
Body manufacturer	Ford Motor Company
Body mods	5 1/2" front chop tapering to 5" rear by Rolling Bones Hot Rod Shop
Hood	Rootlieb (Turlock, CA) w/ custom top louvers
Bodywork	Rolling Bones Hot Rod Shop
Paint type / Color	PPG lacquer / Midnight Black
Painter	Rolling Bones Hot Rod Shop
Headlights / Taillights	Guide / '37 Ford
Outside mirror	modified early Ford pickup
Bumpers	custom-fabricated rear push bar
Other body items	hellish radiator cap

INTERIOR

Insert / Gauges	stock / Stewart Warner (Lancaster, PA)
Stereo / Speakers	stroked Flathead w/ weed burners!
Air conditioning	cowl vent
Wiring	custom
Steering wheel	'40 Ford
Steering column	custom
Interior mirror	early Ford
Seats	modified Deuce
Upholsterer	Dorie Depasquale (Gloversville, NY)
Material / Color	leather / tan
Carpet	rubber matting
Other interior items	vintage door & kick panels confiscated from an older restoration, roof insert w/ 200 louvers & chicken wire base, hidden tool tray under rear seat



GARAGE SCENE

Pete Aardema

BY ERIC GEISERT

Pete Aardema's garage was something to behold, especially if you think you're a tinkerer. After 40 years of collecting, Pete's place was stuffed with unimaginable engine-with-overhead-cam combos—a fetish of Pete's in his quest for more power.

The quest for more speed and more power will never end for some rodders. In a strange way, it never can, because there will always be another combination of engine and driveline parts that can be put to the test. Pete Aardema (are-DEE-ma) knows this fact all too well, as he's been chasing the dream for more than 20 years.

A self-confessed tinkerer, Pete's fascination lies in four-valve heads, single- and dual-overhead cams, and aluminum blocks—all key ingredients for a lower e.t. or record speed. And though he has a weakness for dry lakes racing (one of his 196-cid, four-banger engines has a record at 153 mph), most of what Pete has to offer is for the street.

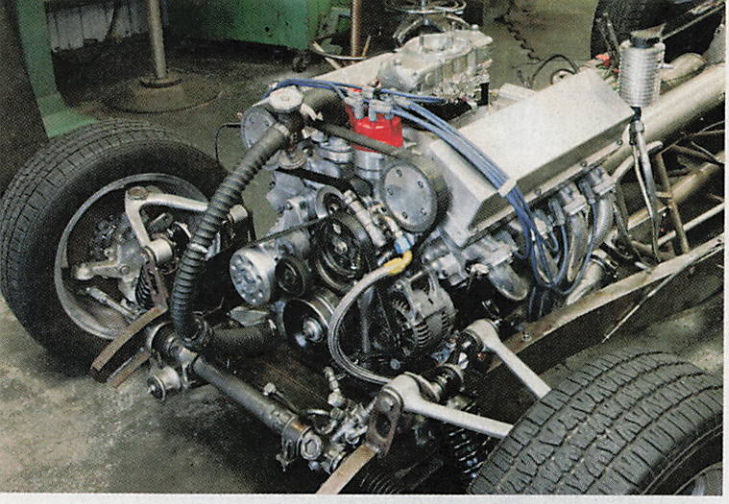
Not afraid to try something new, Pete will pull from any parts bin to make what he wants work. Porsche four-valve heads on a big-block Chevy? No problem. A pair of Subaru heads (with twin cams) bolted to a 200-cid Model A motor? Already got one. How 'bout a simple overhead cam conversion for a small-block Chevy? He's made more than 50 of them. And he's finally started to adapt the Ford big-block FEs with one of his single overhead valve kits, too.

Never wanting to spend a lot of money on anything, Pete learned a long time ago that junkyards are still the best place to get what you need. But where most folks are limited to a small, ever-dwindling selection of performance parts to look for, Pete's eyes are wide open, looking to create new avenues for possible horsepower gains.

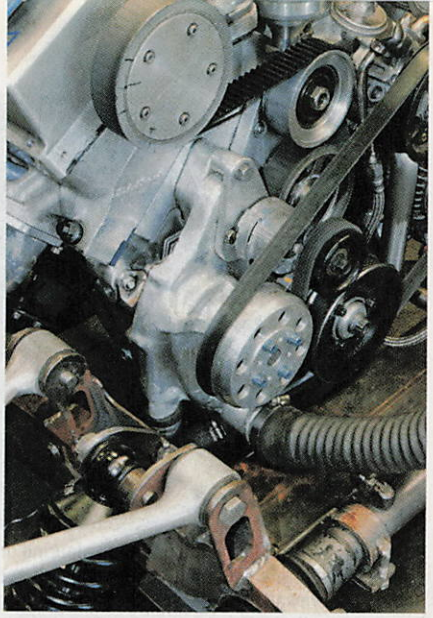
His latest project is a progression from an earlier endeavor where he wanted to use the entire drivetrain of a C5 Corvette under a '34 Ford coupe. To do so, he had to modify the coupe's body and fenders to make things fit. This time around, he didn't want to do anything except shorten the rear axles, and it looks like he's got it figured out with this new chassis.

He found the drivetrain sans motor (wheels, transaxle, torque tube, calipers, transaxle cage, A-arms, etc.) in a Florida junkyard for $2,500, then made his own exhaust (along with Butler headers), 18-gallon fuel tank, and some of the suspension pieces. The engine is a 427 Ford FE (Pete's first foray into big-block Fords) that started as a bare aluminum block from Shelby, to which he added the aluminum Edelbrock manifold and FE heads. To top off the heads, he added his own overhead cam conversion kit.

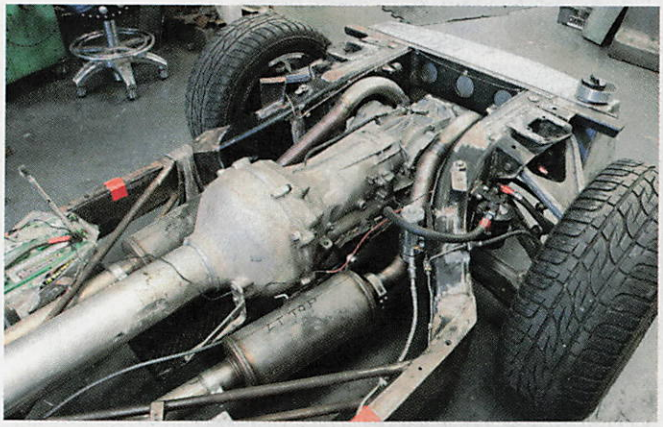
Pete had recently been able to start and run the engine in the chassis, and had already dropped the '34 body on to make sure everything fit correctly. But the recent wildfires in Southern California blew through the Escondido area where Pete



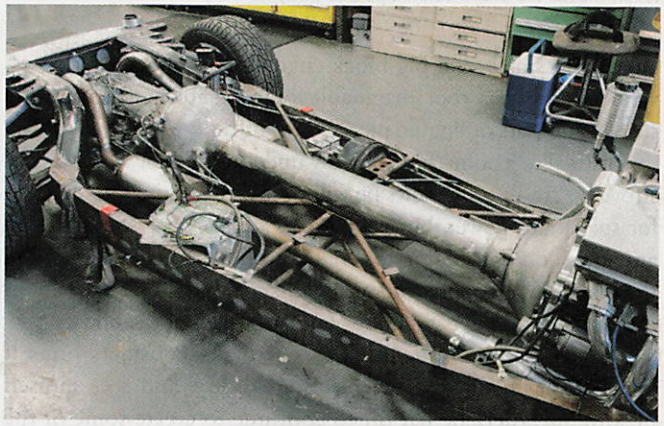
His latest project is actually the second time he's used the C5 Vette suspension in a vehicle, but it is the first time he won't have to widen a '34 Ford body to make it fit the chassis. The front suspension is homemade, with the camber and caster adjusted on the lower arms so the look stays clean up top.



Pete started with a bare aluminum 427FE block from Shelby and added Scat rotating assembly, but notice the location of the water pump on this Ford. Mounted low for extra clearance and rotated 90 degrees, Pete had to fab a new outlet for it due to its new location.



The shortening of each axle by 3 inches is the only thing done to the rear assemble. Other than that, the chassis is fairly stock, except that Pete added the rear section of the Corvette chassis to the '34 'rails, and he did make his own 18-gallon fuel tank.

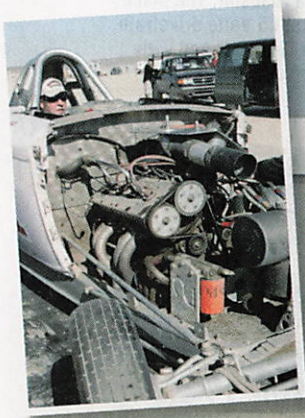


The torque tube—large by hot rodding standards—was not modified in this application. The idea was to be able to take as much out of a 2000 Vette and adapt it without any modifications.

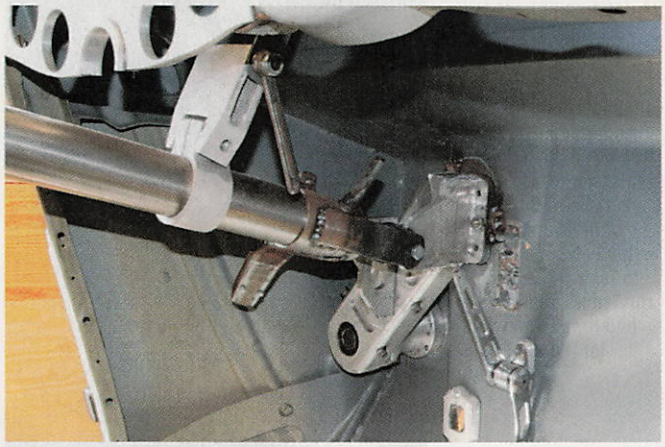
lived and had his shop, and unfortunately both were leveled in the destruction (these photos were taken two weeks prior to the fire).

In the few hours before the fire consumed his shop and home, Pete was able to save this running chassis, a couple of cars, and the race car, but several other vehicles and projects all burned to the ground (the fire was so intense it blistered the concrete!).

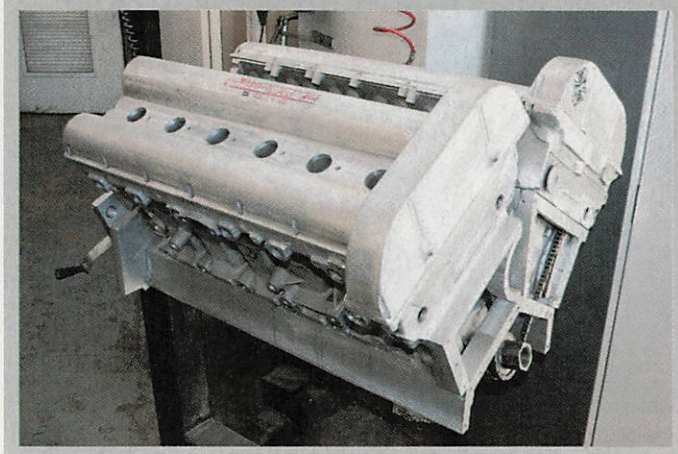
An open shed/garage outside his shop that contained another complete Corvette, a boat, a customized truck, and a co-worker's mid-engine project all perished, as did the high-dollar CNC machine, drill press table, a Bonneville race engine, numerous

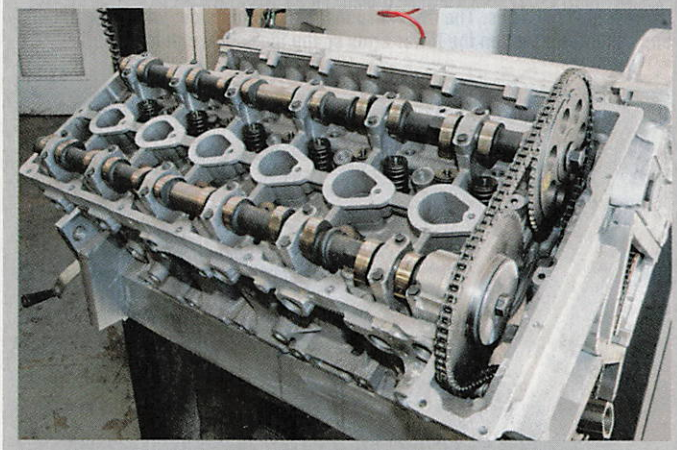


Pete is credited on the decklid of this '29 Ford roadster, called the *Spirit of San Diego*, for his engineering and machining of its 198-inch Model A motor. Pete adapted a pair of Subaru heads (with four valves and twin cams) to the little four-banger, which has pushed the car down the dry lakes for a record 153 mph with Scott Goetz driving.



Pete designed and built a chaindriven steering unit in both of his '34s that allows the steering column to remain up high and out of the way before exiting the firewall. There's also a self-made hinge that, with the throw of a lever, moves the entire column up and away for easy access into the cab.





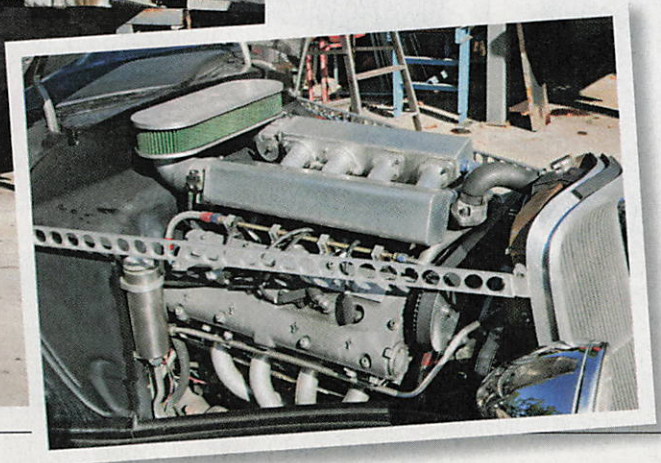
If you had two straight-six engines lying around, would you think to graft them together to make a 500-inch V-12? The 8.5-liter four-valve twin-cam motor was something he's been toying with, but hadn't progressed past figuring out how to mate the Chevy TrailBlazer heads to the straight-six blocks.

aluminum small- and big-block engines, lathes, brakes, presses, welders, and every tool imaginable for being able to fabricate any suspension part or engine piece you can think of.

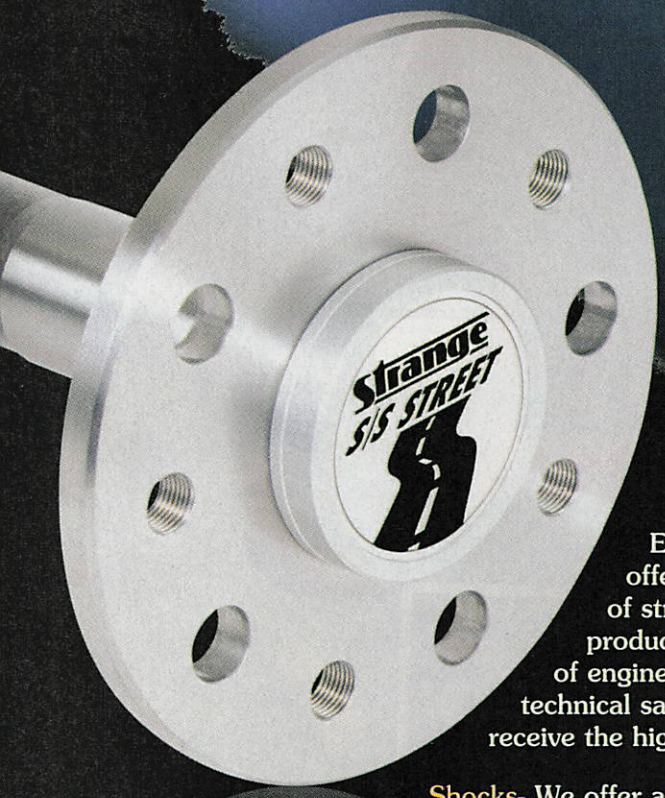
Insured to a point, but certainly underinsured for what was destroyed, Pete already knows he will continue working on his quest for speed and power, but isn't sure as of yet what will get done anytime soon. He's going to rebuild both his house and shop on the same property and, forever the tinkerer, has even talked about including a sprinkler system for under the eves of the house.

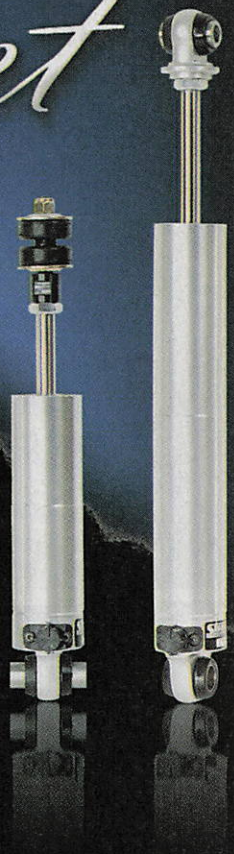
Whatever the outcome, Pete Aardema considers himself lucky to have survived where others didn't, and sees himself picking up where he left off to continue to create some of the most unusual engine combinations we've ever seen. We wish him all the luck in the world, and can't wait to see what he comes up with next. SR

The red '37 on the lift is a transverse-mounted mid-engine car Pete created by using a 383-inch Donovan with one of his SOHC kits installed. He made his own transfer case to handle the load from the Olds Toronado trans, and the stock top was converted into a lift-off hardtop—similar to what is found on some Mercedes—to make it a roadster. The black roadster features his first C5 Vette drivetrain, but he used a big-block Chevy topped with Porsche 928 heads to give the car its go.



Strange Street





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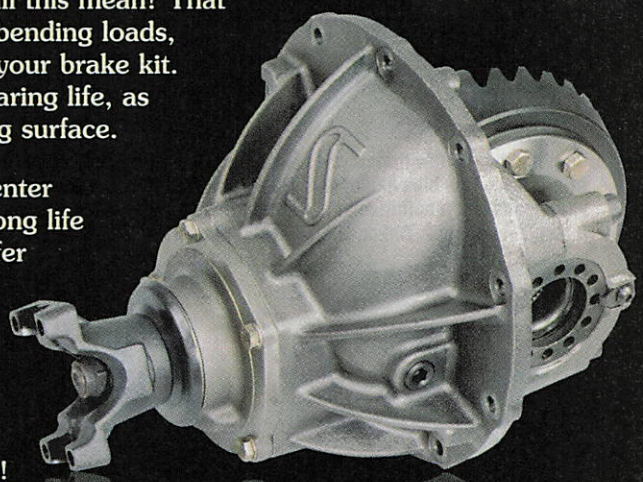

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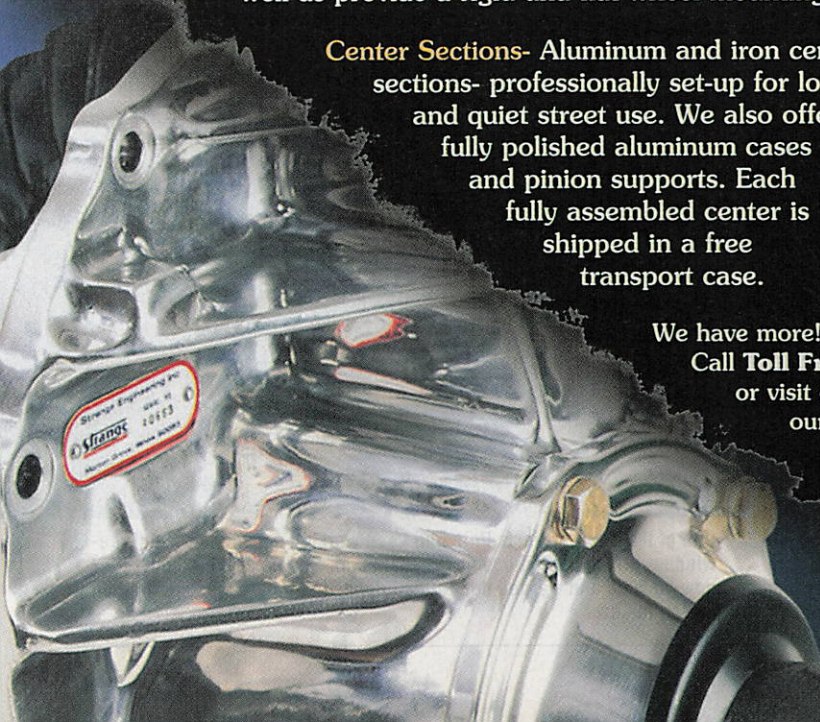

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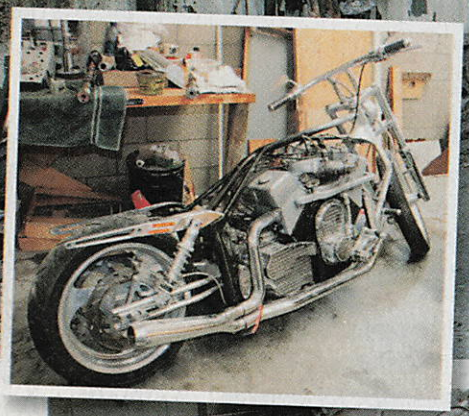
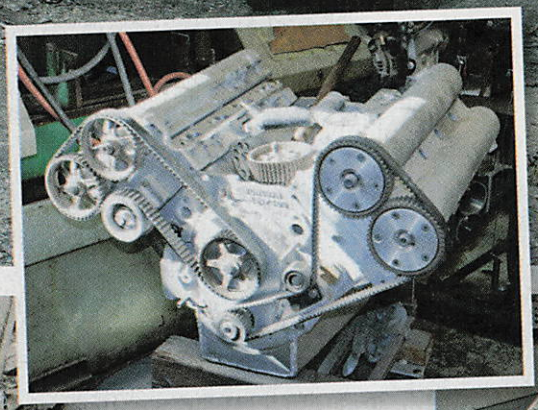
Here's what Pete's garage looked like a few days after the blaze had gone through his area, and he reports the heat was so intense it blistered the concrete floor. Other than the few cars he was able to get outside the night before, nothing else could be saved, including his house.





This is what a typical Aardema DOHC motor looks like, before and after the blaze. This one was an all-aluminum 350 Donovan block with dual overhead cam heads (from an Infiniti) converted to beltdrive (rather than chain). This was one of Pete's older motors, as he built it well before Chevy came out with the ZR1.

Pete had built a few motorcycles, including some for Harley god Arlen Ness. This bike had a Scat V-4 engine with Pete's overhead cam heads and a beltdriven distributor all stuffed into a Ness frame. It comes to about 2,700 cc of displacement with about 175 hp.

One of the more bizarre scenes after the fire was the big-block posed on top of a lathe. Pete had a handful of the engines stored upstairs, but everything came down and landed where it wanted when the mezzanine collapsed.

One of the other projects Pete had been working on was this '34 three-window, which he had bought 25 years ago. Once a pristine body, it's now buckled and warped due to the intense heat and objects falling on it during the fire.

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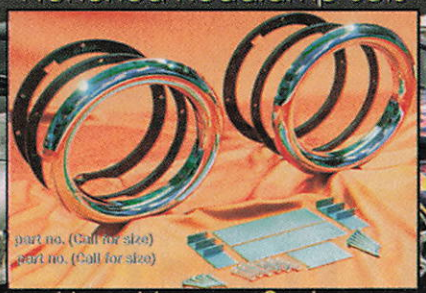

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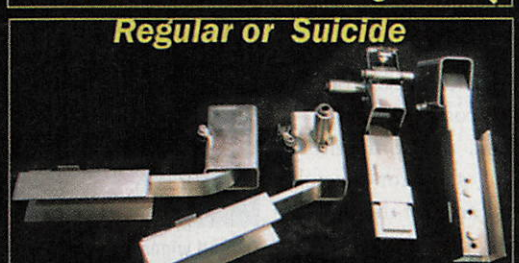

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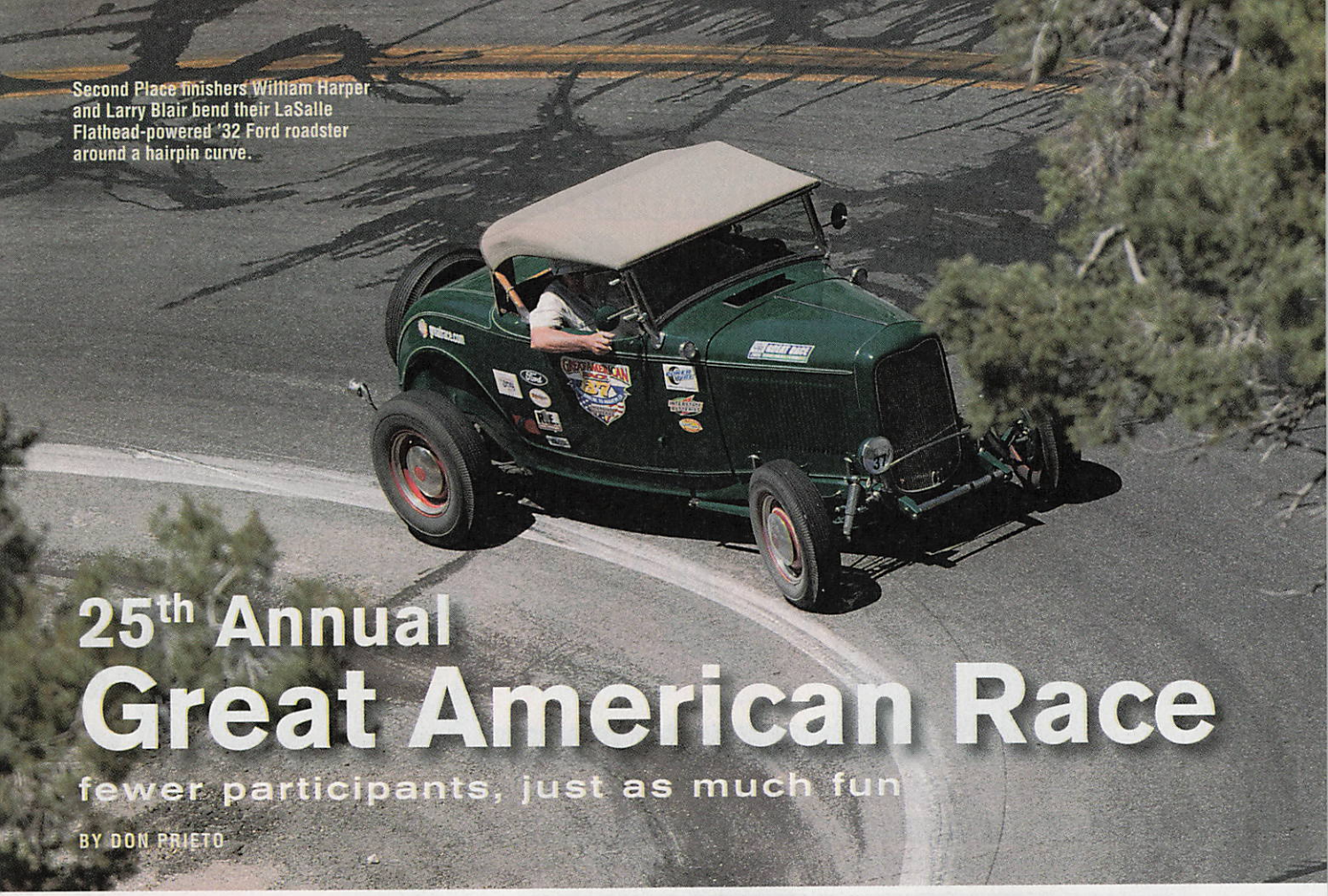


Second Place finishers William Harper and Larry Blair bend their LaSalle Flathead-powered '32 Ford roadster around a hairpin curve.

25th Annual Great American Race

fewer participants, just as much fun

BY DON PRIETO

Let me start off by saying that this year's Great Race participant turnout was a little less than we had hoped for. Last year there were 115 entries, a competing high school contingent, and a few special guest participants; this year there were 72 entries, and seven of those joined midway in Dallas while others dropped out having only signed up for the first half ... no high school teams, no Geico lizard, no National Guard teams—it was sorely lacking in comparison to a year ago.

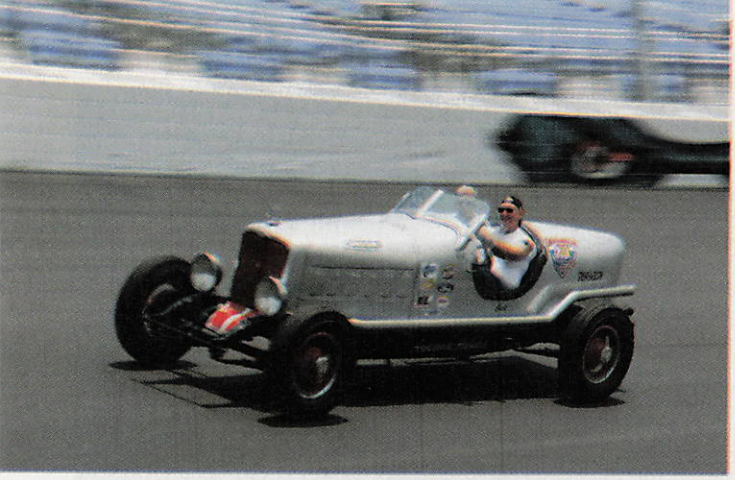
Don't get me wrong; everybody had a great time and the competition was fierce. It's just that there was this feeling that something appeared to be missing. The celebration of the 75th anniversary of the Deuce did bring some newly prepared cars to the competition and added an element of camaraderie for that category of participant. The addition of later-model cars also brought some new blood to the staging of this coast-to-coast event.

Before leaving Concord, North Carolina, the competitors and crew visited The Roush Fenway Racing shop for the full tour. Additionally, they got to drive into and around the Lowe's Motor Speedway.

Things started out well for the subject of last year's report on the Great Race, Frank Currie (longtime rodder and the patriarch of Currie Rearends) and his grandson, Cody, contesting the race in a 1911 Selden (the oldest car in the event). They finished the first day in First Place with105 points and took home the newly established Daily Winners Purse of $1,500. Cody was ecstatic, but it didn't last long. They scored poorly on the second day and dropped well back in the standings.

Overall winners Bob Labine and 15-year-old Charlie Wheeler display the magnificent eagle trophy and pocket the $25,000 First Prize.

The team of William Harper and Larry Blair in their LaSalle Flathead-powered '32 Ford roadster moved quickly into the running for the big bucks, while last year's GR winners Dave Reeder and Sawyer Stone had a rather dismal start. They had switched from their winning 1911 Hudson to a newly built Brookville '32 Ford three-window and had great "out of the elements" expectations.



Chad Caldwell hustles the '31 Auburn Speedster around the Charlotte Motor Speedway—havin' a ball.

While they didn't fare very well in the early going, they did finish third overall in the final standings and picked up the trophy and the bucks for that lofty finish.

There were a total of 11 '32 Fords in varying configurations and all provided lots to cheer about for the 75th anniversary of the Deuce. At the end, nine of the total finished, with two going halfway and ending in Dallas. Mike Goodman in the sharp Honest Charley's Speed Shop/Coker Tire (ambidextrous) '32 Ford roadster had commitments that required him to return to Chattanooga, but I'm sure he would have liked to have gone all the way.

Prize money for winning each day was new this year and it paid back three places on each of the 14 stages. There was also a payout for the championship stages, which was the best total score for the last three stages.

Our man Frank and grandson Cody soldiered on in the '11 Selden through the elements, including golf ball–sized hail in the Albuquerque area. They managed to take home a good chunk of the daily stage payout, garnering two firsts, two seconds, and the additional first for the best score on championship days for a grand total of $10,000.

Not to be outdone, the winning team of Bob LaBine (five-year veteran) and his 15-year-old nephew, Charlie Wheeler (three-year veteran), took home the big money by being consistent. They also had two stage wins, three seconds, and a third—all of which were paying positions. Driving an open-wheel 1928 Ford Model A boat-tail speedster, LaBine and Wheeler braved the elements over the 4,100 mile trek across America and finished 83 points ahead of second—a total of 1,020 versus 937 for second. They picked up the $25,000 cash prize and the terrific bronze eagle trophy.

Corky Coker and his wife, Theresa, soldiered along in their Buick Shafer 8 open-wheel 1937 Indy car, and Corky could be seen whooping it up for the event at each pit/lunch/finish line stop. He often got in one of his now-famous plugs for his vintage tire company. Needless to say, his enthusiasm for the Great American Race spilled over to others and did not go unnoticed. Corky was awarded the *Tom McRae Spirit of the Event* award, given to the racer or team that exhibits a competitive spirit that makes the race one of the most unique competitions in all of motor sports—and deservedly so.

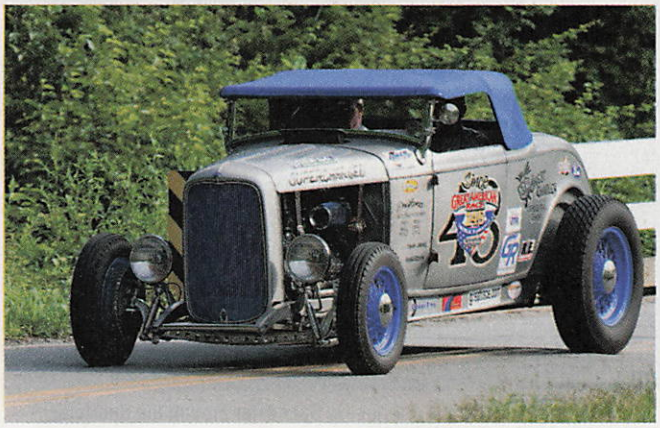
Twenty-one–time entry Stan Jones and granddaughter Wendy Murphy soldier on in Stan's bone-stock '32 roadster.

The entry list this year was expanded to include hot rods, musclecars, imports built prior to '71, and hybrid vehicles. This explains how the team of Pat and Ali Schulte won the rookie class, and the $10,000 prize money, in their 1965 Porsche 356C. Overcoming gearbox troubles, this rookie pair drove their little yellow coupe into the winner's circle and accepted the applause from all present. No strangers to adventure, this couple had just completed a three-and-a-half-year trip around the world in a sailboat—BRAVE.

Regardless, they will be well prepared for next year's Great Race, which will replicate the Great Race of 1908 by going around the world from New York to Paris via Vancouver, Canada; Beijing, China; and Berlin, Germany, ending at the Eiffel Tower. SR

Jon Auerbach and son Jake at high speed. This car, as is, was raced by an ex-president of Mexico.

This tank-powered chopped truck could be called the Top Fuel winner, with an average usage exceeding 100 gallons of fuel per day.



Rookie Mike Goodman *hisself* chauffeured the Honest Charlie Deuce and picked up 2 Aces.

Heartland Hot Rod—a 1916 Hudson 6 with Jeff Stumb and Robert Dinges aboard.

One of the Great Race sponsoring cars, the Coker entry with its Buick straight-eight at full song.

A genuine historic race car, the *Golden Submarine* of Barney Oldfield was driven by 13-year vet Dale Bell.

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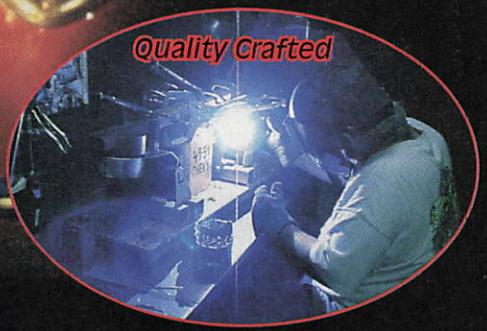

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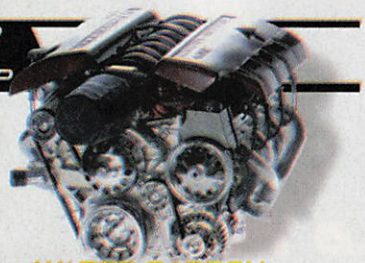

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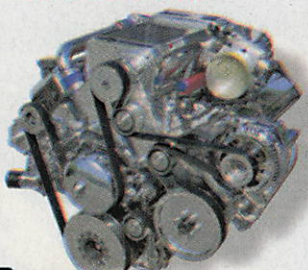

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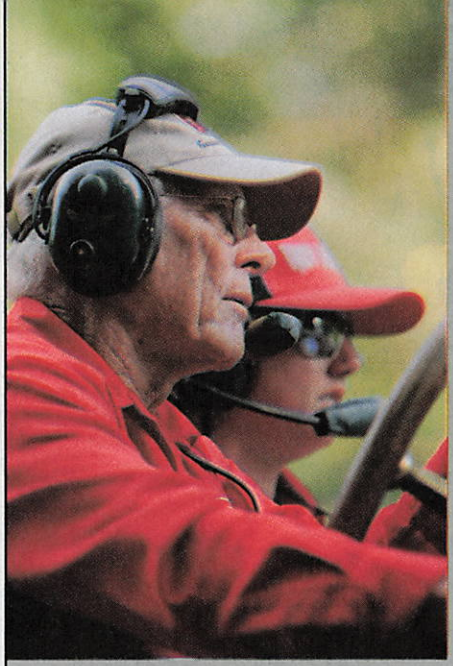

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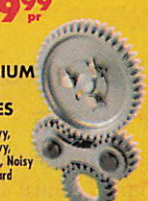

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BY WAYNE SCRABA

WHEELS OF FIRE: Part II

everything you need to know about rolling stock

We took a brief look at some of the varied wheels seen on street rods in the last issue and also examined in detail what really makes up a wheel. The truth is, there's a lot of choice out there, and tires most certainly compound that diversity. The bottom line here is, name your poison. If you dream it, it likely exists when it comes to rolling stock. In this installment, we'll not only take a detailed look at mounting tires on wheels, we'll also look at things like lug nuts, wheel studs, nitrogen refills, and even roadside repairs—there's something here for every street rodder. SR

Rolling On Down The Highway

Mount and balance wheels and tires

In the photos that follow, you'll see how a pretty common BFGoodrich Radial T/A is mounted on a 16x10.00-inch Real Rodders wheel. A new wheel was used as an example, but in many cases, a rodder will bring in a used wheel. BFG mentions that all used wheels that are about to be mounted should be cleaned. You'd be surprised how many street rod wheels are actually covered in rubber debris and dirt. Not only is it tough to mount a tire on such a wheel, it makes balancing difficult. Tires should be kept clean too, so use a common tire cleaner or protectant such as Armor All, but never use a brake-cleaning chemical on tires. BFG also points out that you should remove all old weights along with any tape used to cover the weights. It's also easier for technicians to handle tires that aren't flat, so keep the tires full of air when returning rolling stock for a remount.

For a closer look at how the pros mount tires, check out the following images.

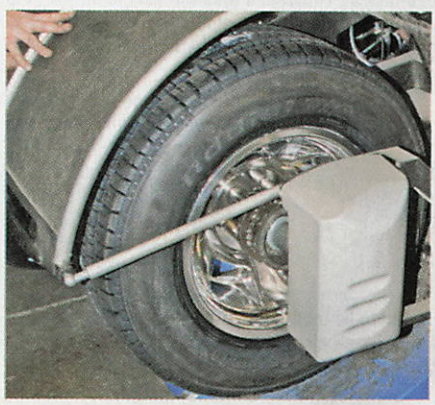
The wheel used in our example is the Real Rodders wheel we showed in the last issue. The BFGoodrich tire we're using is usually operated tubeless. In this photo, the Tires Unlimited technician is installing a valve stem.

The tire used in the example is a BFG P285/60R16 Radial T/A. This is a tall radial with a tread width of 10 inches, an overall diameter of 29.5 inches, and a measured section width (bulge dimension) of 12 inches. The tire is designed for use on wheel width ranging from 8 to 10 inches. The bead on the tire, along with the inside of the wheel, should be coated with a lube of some sort before mounting. Here, Prema Euro Paste mounting compound—designed to reduce bead damage and help eliminate rim slippage (tires turning on the wheel rim) at the same time—is brushed on. It doesn't freeze or harden either. The third benefit of using this stuff is the ability to inhibit rust; many tire lubricants are water-based and corrosion will develop on the wheel in the tire bead area if the solution doesn't include corrosion inhibitors. This corrosion will build up and can eventually cause the tire to leak between the bead and rim. Also, the corrosion can cause a form of "welding" between the tire bead and the wheel, making it very difficult to break the bead when the tire is dismounted later. Using unusual force to break a bead may cause bead damage. By the way, some shops still use a mix of good, old-fashioned liquid dish detergent and water.

The next step involves installing the tire over the wheel. It's common practice to install the backside first, followed by the front side or face side of the wheel. There's nothing fancy here, but care is taken not to damage the wheel or the tire.

At this point, the core is installed in the valve and the tire is filled to a maximum of 40 lbs psi to seat the bead to the wheel rim. If the bead doesn't seat at that pressure, then the tire should be broken off the rim and re-coated with soap or mounting paste (in essence, you have to start from the beginning again). The use of excessive air pressure when mounting tires isn't a good idea. Once the tire has seated, reduce the air to the approximate intending running pressure. In this case, it's set at 35 lbs psi. Keep in mind, street rods don't have exact pressures you can use, so each car will mandate how little or how much pressure is required. It's usually a matter of trial and error.

You have a couple of options when it comes to balancing—use a good old-fashioned bubble balancer or, as shown here, a modern spin balancer. Keep in mind there are two types of imbalance you'll most likely encounter when balancing a tire: static or dynamic. Static imbalance is vertical movement resulting from heavy or light spots in a tire. This imbalance can be corrected using either a static bubble balancer or a dynamic spin balancer. On the other hand, dynamic imbalance is caused by lateral movement (wobble or shimmy) that comes from unequal weight on both sides of the tire and wheel/wheel assembly centerline. This imbalance can only be corrected with a dynamic spin balancer. In case you're wondering, dynamic balancing doesn't mean the ugly weights have to be placed on the outside. A proficient tire technician can manipulate the setup so that the weights all tuck on the backside of the wheel. Another issue is tire "out of round." It's not that common on modern tires, but there's always a possibility the tire has high spots with vintage bias-ply rubber. In fact, just before the radial became uber-popular in the early '70s, plenty of tire shops "trued" out-of-round tires. Essentially, this process literally shaves the mounted tire with sharp blades as a machine spins it. The reason for truing the tires was (and still is, if you have vintage rubber on your rod) because you'd often find a bias-ply tire or even a complete set could not be balanced. You'd end up with a vibration at one speed or another. Graybeards will remember how this vibration grief drove them nuts, and truing was the only answer. There are select shops out there today that still do the work (think places that mount and balance big truck tires).



A modern tire balancer, such as this Hofman Geodyna Optima, is pretty much hands-free once the wheel and tire is mounted. A laser system determines where the weights go and how much weight is required. By manipulating the weight location, the technician can hide the tape weight on the backside of the wheel. In fact, this setup allows the technician to hide the weights behind wheel spokes. While more common on wheels and tires destined for racing, some shops add a strip of duct tape over the tape weight when complete.

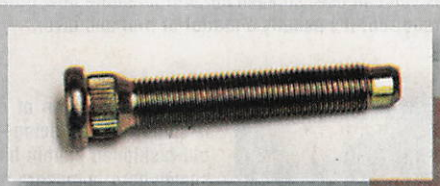
We've looked at nitrogen refills in the past (see *SRM*, January 2008, "It's A Gas"), but here's a short refresher. One of the benefits of filling your tires with nitrogen is the fact that air pressure is more easily retained. According to Ingersoll Rand, "Diffusion out of the tire sidewall is 30 to 40 percent slower than oxygen. That's why a nitrogen-filled tire maintains pressure longer." An even bigger benefit for street rods could be the fact that nitrogen prevents oxidation. Oxidation leads to tread separation, but it also leads to corrosion of the rim. Don't believe it? Forget to drain an air compressor after a few days of use and you'll see just how much water is found in compressed air. So, what's the downside? That's simple. Most of us don't have nitrogen refill stations in our own shops, so you have to take the car to a shop and have the tires filled when required. And the key for refills is usually the green filler hose (shown in the second photo). Nitrogen refill stations are often green in color, too.

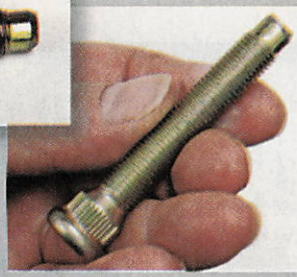
At this point, the tire pressure is checked, tires are marked for their respective sides (important if they're directional), and they're rolled out for mounting (or tossed into the back of the pickup truck). It's a done deal.

You Big Lug

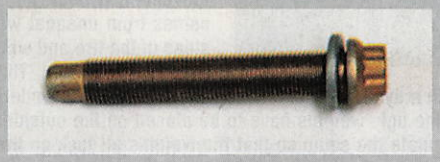
Wheel studs and lug nuts

Wheel studs and lug nuts are pieces of hardware many rodders simply take for granted. If a wheel doesn't fall off and it looks good, then you've found bliss. Why worry about parts if they work? There are plenty of reasons to give these components some extra thought, not the least of which is safety. Not only are these parts much more important than you might think, picking the proper rear wheel studs, nuts, and washers might not be as easy as once presumed. Remember that the stud (and, in many cases, the actual shank of the lug nut) is the element that actually transfers the load to the wheel, and the wheel and tire are what transfer the load to the road. And some of these loads at the axle might be much larger than you think. Look at the basic math (and we mean basic—there's nothing here that takes traction or tire dimensions into consideration): engine torque x torque converter multiplication x transmission First-gear ratio x rear axle ratio = load. Using a typical small-block–powered street rod, the loads can exceed 7,500 ft-lb of torque at the axles. Arguably, in most situations, there are two axles and 10 studs to distribute this load over, but it's still a bunch. That's why wheel studs and lug nuts are important.





This is a conventional drag race replacement stud (Moroso sells this version). The stud simply presses into the front wheel hub or stock axle flange. Drag race studs are typically longer than stock, but otherwise they're similar to what a production car uses. This Moroso stud measures 7/16-20 x 2 7/8 inches with a knurl measurement of 0.560-inch. Note the bullet nose. The idea here is to facilitate lug nut installation.



Mark Williams sells this 1/2-20 x 3 1/2-inch stud for use on the rear of a race car. This stud (or bolt, which is probably more correct) screws in on the backside of the axle, and is held in place with a lock washer. When using studs such as this, it's a good idea to use Loctite or an equivalent thread cleaner along with a "most severe service" thread-locking compound (use red Loctite on the bolt/flange only, not on the actual lug segment of the stud!). In the case of M-W studs, the bolt head on the backside of the stud must be torqued to 65 ft-lb.

This M-W piece, which was initially designed for NASCAR competition, is another stud type you might come across. This stud has a quick-start segment machined on the nose, and, as you've probably gathered, this allows the lug nut to be installed rapidly without cross threading. Again, this is more of a bolt than a stud, and it too is installed from the backside of the axle, using a lock washer for retention. This stud should only be used with the GN-style quick-start nuts or acorn-type nuts.

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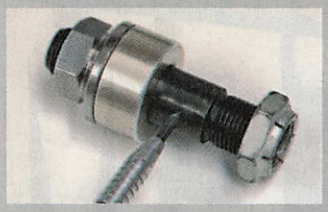
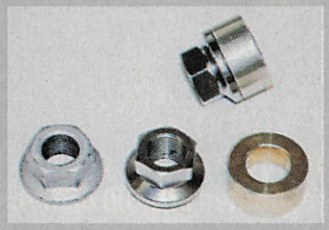
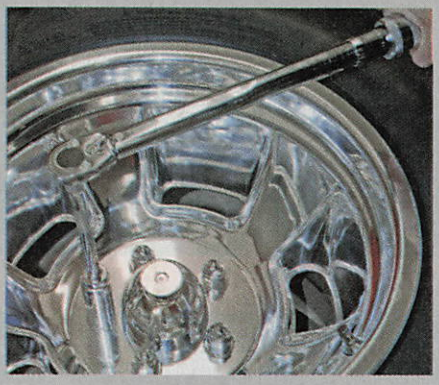


A drive stud (such as this M-W version) is designed with a 5/8-18 thread on each end with an 11/16-inch shoulder in between. Obviously, the shorter threaded segment is installed in the axle and secured with a jam nut. Meanwhile, the shoulder (see the pointer) is the same od as the lughole id in common aluminum wheels. This ensures that the stud actually does the driving of the wheel, not the lug nut.

In conjunction with the drive studs, M-W also manufactures a series of lug nuts that includes the standard flanged model on the left and a series of reduced hex nuts. These nuts have a hex-head size of 7/8-inch and are designed for use with special M-W washers.



This is a standard acorn-style lug nut. This configuration is used in countless applications and has been for decades. Some variants have closed tops with either a chromed sheetmetal covering, or the lug nut is completely solid and then plated. Some foreign cars have a ball-seating area, while the common style most rodders will come across has a conventional tapered seating area like this (usually with a 13/16-inch hex). In any case, all acorn nuts work the same: The tapered shank fits the taper of the wheel. You just can't mix and match styles. Although not shown, another style you'll come across is the ET wheel setup. This setup is designed for a proprietary acorn lug nut with a small shank on the end. That particular lug configuration is designed for use with a special washer.

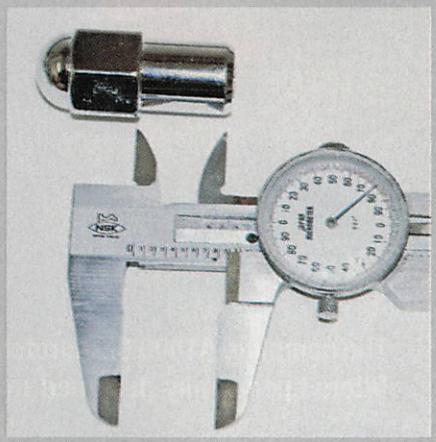


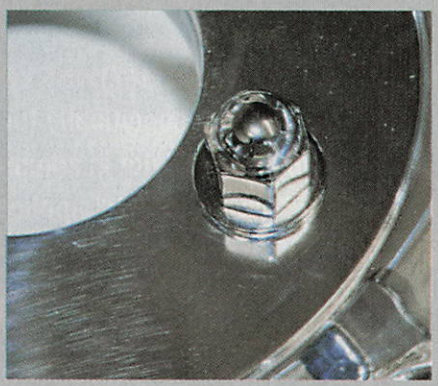
Torquing lug nuts to spec is an important step many forget. Here's how to do it: If your car is a later model, and has stock-style wheels, you can simply use the specs in the shop manual. Additionally, many wheel manufacturers provide their own specs for torque. For example, the Real Rodders wheels shown in the photo mandate a maximum torque of 60 ft-lb for half-inch wheel studs and 50 ft-lb for 7/16-inch studs. Otherwise, use the figures from the following chart. In either case, the lug nuts should be torqued dry, and you should use a conventional "star" or criss-cross pattern.

Typical torque in ft-lb	
7/16"	70-80
1/2"	75-85
9/16"	135-145

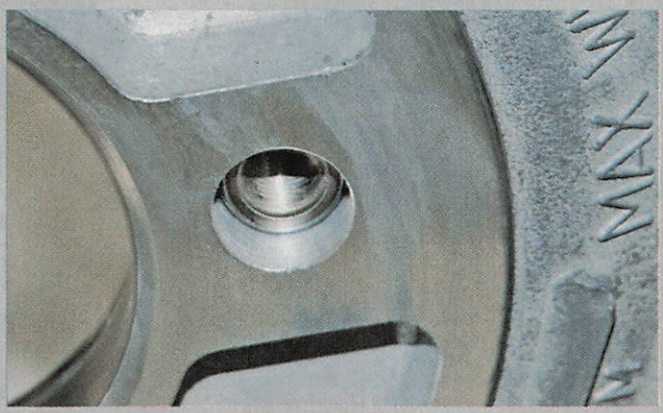
If you've just installed new wheels, the nuts should be re-torqued after driving 50 to 100 miles. Why? Simple. The fresh wheels are "moving around" due to thermal stresses and compression and elongation, as well as in case the clamping loads have changed following the initial installation. Wait for the wheels to cool to ambient temperature before the re-torque (never torque a hot wheel, because the values will change as the wheel temperature changes). Loosen and retighten to the torque value in sequence on each wheel.

A far more common lug nut you'll come across is this variety. Most are manufactured with a common right-hand thread, but several manufacturers made use of left- and right-hand threads for their lug nuts (vintage Mopars, small Mopar products with 7/16-inch studs, along with early Oldsmobiles and Pontiacs with a 5-on-5-inch wheel bolt pattern). The theory behind it stated you need left-hand threaded lugs on the left side of the car, so they can't unscrew. We now know that right-hand threads work perfectly well on either side of the car. The reason is the combination of fine threads and relatively large assembly torque applies so much force against the respective surfaces that friction holds the wheel in place. That's why thread lubricants on wheel studs and lug nuts are frowned upon. Don't use lube on lugs! As far as lugs are concerned, the one in the photos is a common "mag nut" with a 7/8-inch-long shank. This type of nut is always used with a thick flat washer (usually 1/8-inch thick). Factor in the thickness of the washer and you'll find approximately 3/4-inch of the shank passes into the wheel (more in the next photos).





On the face side, this is how a typical lug nut looks, complete with the washer installed (don't forget the thick lug nut washer—it distributes the load over a broader area). The second photo shows the backside of the wheel. Note that the lug nut shank does not protrude through the lug bore. If it did, you'd never be able to tighten the wheel. You'll eventually break the stud if you attempt to tighten the wheel if the nut shank is too long and protrudes through the backside of the wheel.



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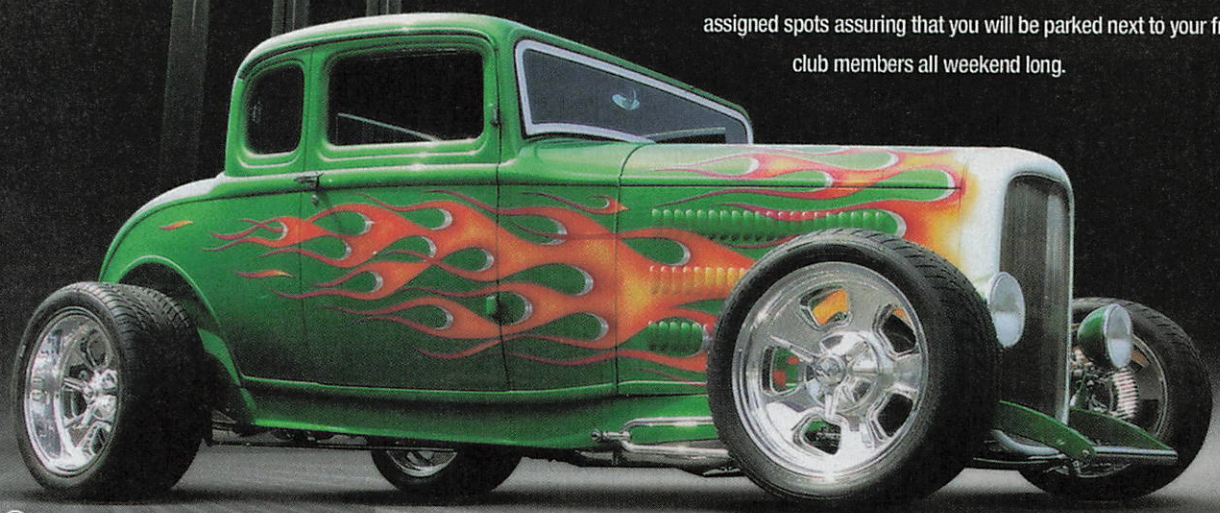

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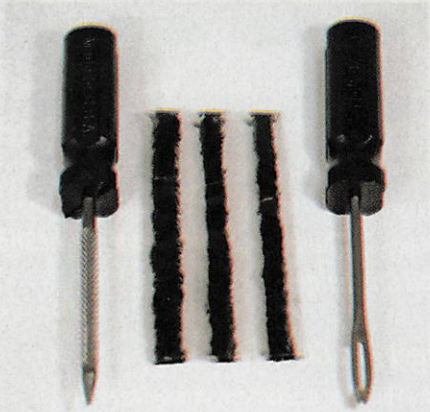
Flat Fixation

Solving the roadside flat-tire dilemma

Flats are something both street rodders and motorcyclists detest. In both cases, spare tires aren't always an option. The trouble is, most motorcyclists are more prepared for flats than we are, since they can purchase dedicated little kits to get the job done. We usually can't, but we can make up our own roadside flat–fix package. Here are the pieces of the puzzle.



These three items are available in kit form from most auto parts stores (in varying brand names). Included are a rasp, tire plugs, and a needle. In use, first remove the object that caused the puncture. To clean the "wound," insert the rasp fully, and then rotate it in one direction (only). Never reverse the direction of rotation. Pull out the rasp. Next, insert a plug in the center of the needle tool. Push the needle into the hole until the plug is roughly two-thirds of the way into the tire. Pull the needle out with a quick motion (and don't twist it). Cut off the excess plug material. You're ready to add air.

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A puncture sealant is another option. To use this stuff, first jack up the car to remove weight from the tire. Next, shake the can, and then hook the hose to your valve stem. Hold the can upright and press the button on the top. Presto. The sealant goes into the tire and inflates it at the same time. Lower the car as soon as possible and drive it. That allows the puncture sealant to spread inside the tire, ultimately sealing the wound. In either case, remember puncture sealant or roadside plug are temporary repairs. In fact, some tire installers really frown upon both products since they often have to clean the sealant or remove the temporary plug before installing a more permanent plug. Keep that in mind if you decide to perform your own roadside repairs. AAA could very well be the ultimate solution!

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Mild-Mannered

george and elaine pfalzgraf's '52 chevy deluxe is a mild stocker, but a head-turner nonetheless

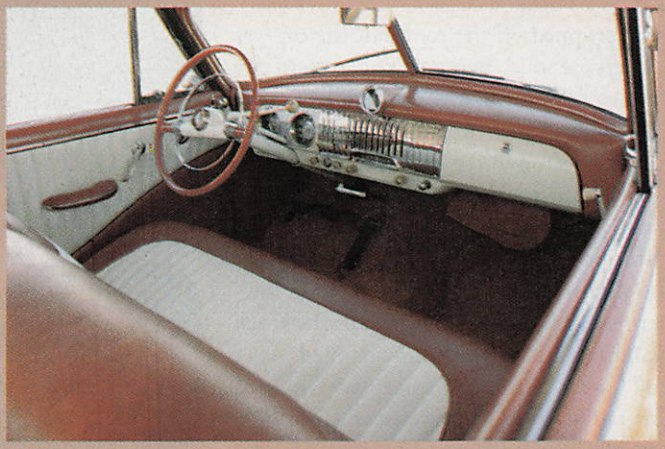
BY RYAN MANSON

Since raising the year break in *SRM* a year or so ago, we've had the privilege to shoot a number of '50s and early '60s cars that we normally wouldn't have spent as much time looking over because of that 1948 cutoff. One thing we've noticed, though, is those later cars make very cool street rods without changing the original styling cues. Very subtle modifications, combined with the usual suspension and drivetrain upgrades, a decent paint job, and an upholstery overhaul, is oftentimes all that's needed to make one very cool ride. Case in point, George and Elaine Pfalzgraf's 1952 Chevy DeLuxe.

George has a long history with cars, going back as far as his childhood when he first became enamored by a neighbor's MGA roadster. A few years later, George not only had an MGA roadster under his belt, but a coupe as well. He went on to own a string of vintage Jaguars—including a '52 XK120 coupe and a '66 XKE coupe—a Nash Metropolitan, and a stock '35 Ford Fordor before stumbling upon a '52 Chevy DeLuxe for sale. The owner was moving south and needed to get rid of the coupe, along with a '50 Chevy pickup. A deal was struck and soon the pair was headed to George's Cedar Falls, Iowa, home.

The coupe was in fair shape when George picked it up, but it needed lots of love. The transmission jumped out of gear, the interior was rotten, and the paint

Joel Mattix at Boss Interiors stitched up the hot rod–inspired spice and off-white Naugahyde tuck 'n' roll upholstery.



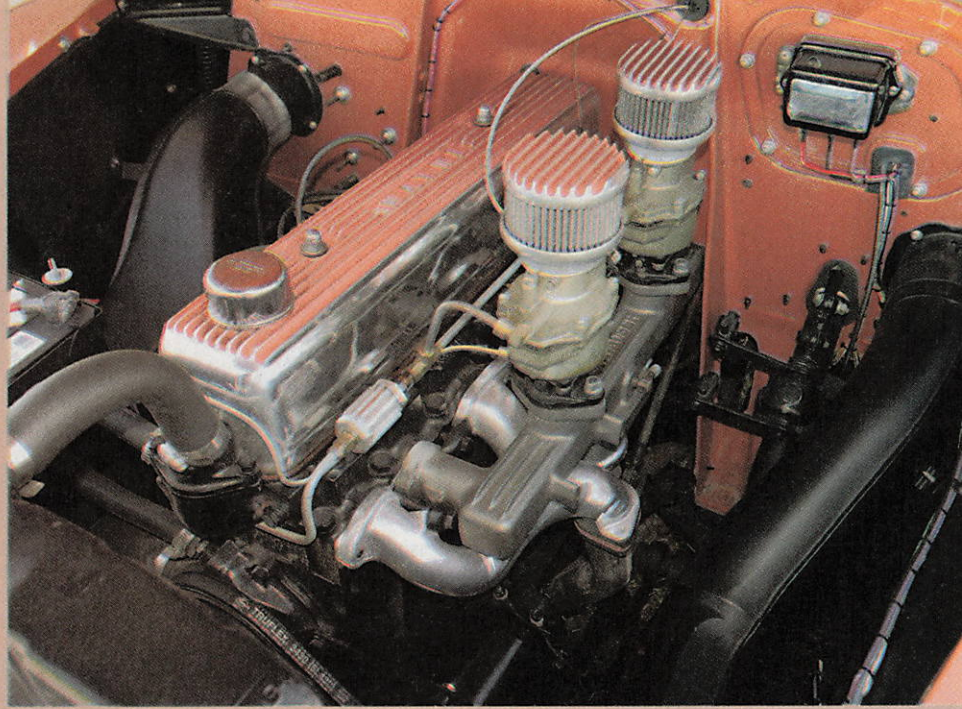
Keeping with the original design of the stock Chevy interior, George opted to have the stock gauges restored by Phoenix Restoration in Davenport, IA, as well as retain the stock radio unit that has been converted to AM/FM by S&M Radio Service in Blaine, MN.

was stripped off the roof, but the car was otherwise solid. Being more of a resto guy than a hot rodder, George decided to take the best of both worlds and convert the stock hardtop in the style of the times.

The first task on the list was to overhaul the stock suspension. A pair of dropped spindles was installed up front to slightly lower the car, along with lower rear shocks, while the rest of the stock components remained unchanged. A set of Coker chrome steelies was wrapped in radial wide whitewalls and installed at all four corners. The original six-cylinder engine was replaced by a more modern 235ci Chevy straight-six and dressed in period performance and dress-up goodies. The stock three-speed manual transmission remains behind the hopped-up Stovebolt.

With the mechanical side of the car sorted, it was time to move on to the paint and body. George wanted to retain that '50s vibe with the exterior as well, so the car was handed over to Jay Jensen, who laid a two-toned Caramel Brown and white paint scheme. While the body was being massaged, all the stock chrome and stainless hardware was sent out to AIH in Dubuque, Iowa, and The Finishing Touch in Chicago, Illinois, who handled those chores respectively. Once the paint was dry and all those shiny parts were reinstalled, it was off to Todd Ilax in Evansdale, Iowa, who installed a Painless Wiring kit before Joel Mattix at Boss Interiors, also in Evansdale, stitched up the spice and off-white tuck 'n' roll Naugahyde.

When it was all said and done, George, with the help of Elaine and all the local talent in and around Iowa, had created one of the most impressive '52 Chevy DeLuxe coupes around today. While the modifications were kept tame and mild, the execution left nothing lacking, resulting in what could be mistaken as simply a stock '50s Chevy. Nonetheless, George's '52 Chevy turns heads wherever it goes, and attracts the attention of hot rodders and restorers alike. SR



The six-cylinder in the old Chevy gave up the ghost long ago and was replaced with a full-oiler 235ci engine of 1960 vintage dressed in a Wayne valve cover and side cover. The stock generator was converted to 12 volts, and an Offenhauser intake manifold with twin Rochester carbs and a split Fenton exhaust manifold help hop up the new Stovebolt.

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Requires 8 2-Position Brass Valves for full F.B.S.S. Two for each corner, 1 for up, and 1 for down

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4 3-Position valve on manifold for complete FBSS, fittings are installed, just plug in bags& gauge lines... COMPLETELY PREWIRED

Save hours on install.. Just Plug and Go!

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3/8" npt x 1/2 tube $4
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NPT to tube connector

For bag or valve fittings

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C10604 Elbow

Used for 90 degree bag or valve fittings

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search:fitting

NPT to tube branch

To branch and split 2 airlines

1/4" npt x 1/4 x 1/4 tube $3
3/8" npt x 3/8 x 3/8 tube $3
1/2" npt x 1/2 x 1/2 tube $4

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Used to join and split 2 airlines

search:fitting

1/4" Fem npt x 1/4 tube $3

Backside of gauge

backside of gauge for 1/4 airline

3/8" npt $2
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Valve muffler

Muffles the valve exhaust noise

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Bottom of airtank

Manual Drain Valve

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100% dutycycle solenoid

Dual 150 Gauge $10
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Dual needles reads 2-Positions

Gold,Silver,Red,Blue Gauge Bezels

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4-Valve Pneumatic Gauge for 1/4" line

$59

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4-Needle Electric Gauge F.B.S.S. up/down/neutral

$69

Hittin' the Big Oval

BY RYAN MANSON

goodguys 1st peak chicagoland nationals

The Goodguys brought its Goodtimes to the Chicagoland Speedway in Joliet, Illinois, this past September, kicking off the inaugural Peak Chicagoland Nationals at the Chicagoland Speedway. More than 2,000 hot rods, customs, trucks, and street machines through '72 gave the crowd, in excess of 45,000, plenty to look at throughout the week end. Perfect autumn weather combined with the drone of the Richard Petty Driving Experience NASCAR ride-along provided the atmosphere as the classics parked, cruised, and perused.

The show kicked off early on Friday with a new feature at Goodguys events that has grown in popularity since the beginning of the year, and it's one that Goodguys plans on expanding next year—the Street Challenge Autocross presented by Air Ride Technologies. Everything from rear-engined kit cars to musclecars to highboy hot rods participate for the best time around a predetermined course. If you've never seen an autocross event, they can be both comical and impressive as cars are put through their paces and pushed harder than what's usually encountered out there on the road.

For those who prefer to drive in circles, the speedway was open all day with the Richard Petty Driving Experience conducting ride-alongs in a real-deal NASCAR race car. And if you just had to get some wheel time out on the course, it was open to all entries for the evening cruise under the lights, just like the pros.

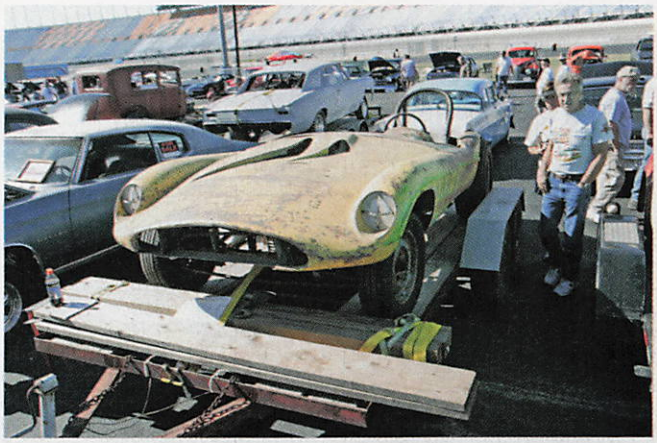
By Sunday, the Goodguys staff had selected the winners and the *Pro's Pick* area was abuzz with the best of the best from the Midwest. Some of the best cars from Wisconsin, Michigan,

Bob Simnick's slick '50 Ford coupe was original in its appearance, although under the hood sat a Ford 5.0L V-8 backed by an AOD trans.

This mild kustom belonged to Yoder, IN-resident Richard Pence. Flawless inside and out, the dark green hardtop remains true to the Chevy moniker with a small-block Chevy engine and TH350 transmission.

Jason Poul drove down from Watertown, WI, in this chopped and channeled "Crank'M Out" '36 Ford pickup.

Here's another neat patina'd truck; this one was the real deal, hailing as an old hauler for the Navy at their China Lake base in Southern California. Glen Allen is the owner of this rare 1950 Ford panel and gets a nod for not painting over the signage on the door.



Can you say "*Moonbeam*"? This little gem was amongst a sea of swap meet vendors and cars for sale, including a few Model As and a half-dozen '50s cars just waiting to be customized.

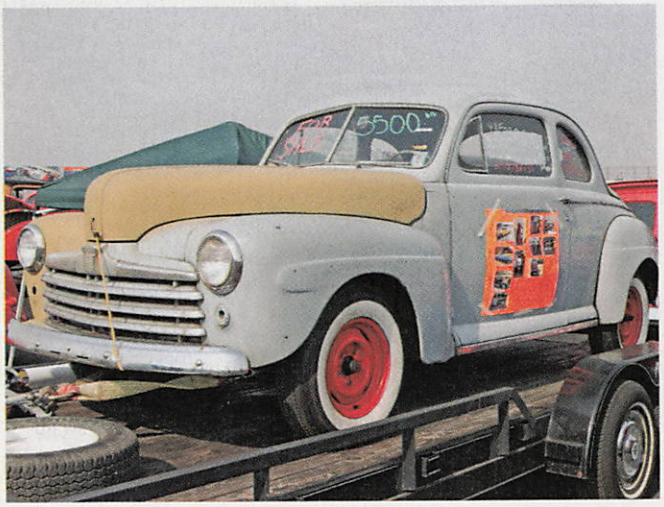
Bob Cardwell is a Joliet local and in addition to owning a *Top 100* award-winning '60 Olds, he is also the owner of this '63 Buick Riviera.

They were three wide in Turn 1 when the hot rods took over the Chicagoland Speedway and got to flog their rides on the big NASCAR oval.

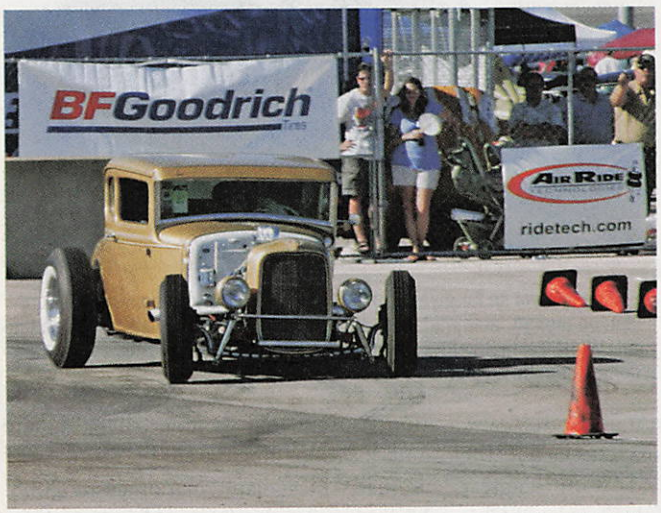
So close and yet so far away. That's Jim Wokas' stock-appearing '33 Ford sedan on the left, and Mark and Theresa Shoup's '34 Ford street rod on the right. While aesthetically very similar, the two cars are worlds apart when it comes to build styles.

Illinois, Ohio, and points unknown were on hand, including 10 picked by the *STREET RODDER* staff and entered in our *STREET RODDER Top 100* program sponsored by Turtle Wax. If you haven't heard about the program, log onto www.streetrodderweb.com to check out the cars from this year's field. With the great turnout and success of the inaugural Chicagoland Nats, the Goodguys organization is proud to announce that the date and location are locked in for the 2nd annual Chicagoland Nationals in 2008! Visit www.good-guys.com for more info, and we'll see ya there next year. SR

Dave and Mary Glass are the owners of these two classic gassers. We're not sure if they drove them both from their Downers Grove, IL, home, but imagine seeing these two coming up in your rearview on the interstate!



We found a couple vehicles for sale in the swap meet area of the Chicagoland Nats that would have made great projects, including this patina'd F-1, and this '48 Ford coupe that was priced right and ready to drive home.



Once again, the Street Challenge Autocross course was getting abused by a handful of determined entrants pushing themselves and their vehicles to the limit.

We're unsure of the heritage behind Jim Cook's '28 Ford roadster, but it looked like it was fresh out'ta the barn with its '49 Merc engine, cracked and weathered paint and upholstery, and vintage build techniques.

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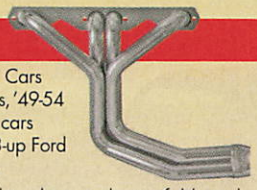
C3



'30-41 Cars & trucks, '49-54 Chevy cars & '53-up Ford F100s.

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Big Block Chevy

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Tight fit eliminates steering, chassis and ground clearance problems. 1-7/8" tubes and 3" collector for top performance!

Plain Steel $265
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C5

'32-48 cars & trucks. For '27-31's, specify C5A.

A proven performer with great ground clearance. Fits with any front or side motor mounts and Mustang cross steering or rack and pinion.

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HiTemp Ceramic Silver $545

Cadillac

CAD500

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Big 1-7/8" tubes and 3" collectors really wake up the Cadillac 500 engine!

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Mopar Wedge & Hemis

DD1

'30-41 Cars and trucks, later model B and C code chassis, '80's Ram series trucks.

Compact performance header for small block 318-360 engines. Requires 3" between motor and steering and/or chassis.

HiTemp Ceramic Silver $415
Plain Steel $265

DD3

'32-41 Cars and trucks, '49-54 Ford and Mercury cars.

Maximum ground clearance and tight fit for 331-392 Hemis. Work with most steering and tranny setups, and feature 1-7/8" tubes and 3" collectors for big power gains!

Plain Steel $295
HiTemp Ceramic Silver $445

Rod builder Dave Simard built this beautiful chassis for his personal Deuce roadster.

PHOTO COURTESY STEVE COONAN, THE RODDER'S JOURNAL MAGAZINE.

Roadster

ZOOMIES!

Here they are! We make 'em in four different lengths from 12" to 24" with big 1-7/8 tubes. 16" length is standard. In stock for most Chevy motors, and built on request for any engine.

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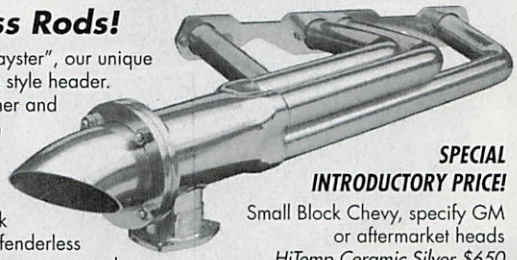

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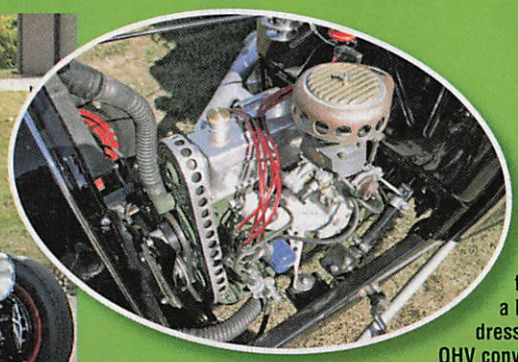
Turtle Wax presents STREET RODDER Top 100

George Pfalzgraf's 1952 Chevy DeLuxe is a real subtle stunner. Powered by a 235-horse straight-six, George and his coupe made the trek from Cedar Falls, IA, to the Goodguys Chicagoland Nationals and picked up a *Top 100* award for their efforts. Turn to page 72 for more on the DeLuxe.

This teal and tan '40 Ford convertible belongs to Plainfield, IL, local Gordon Woeltje. The drop-top rides on a set of Rodster's billet wheels shod in wide whitewall radials and is powered by a Chevy 350 combo. The tan top was chopped 2 1/2 inches and covers the matching Ultraleather interior.



John Thomson's nostalgia-themed '31 Ford Tudor had a Ford Pinto four-cylinder dressed to look like a vintage OHV conversion. A 4-inch chop, vintage Stewart Warner gauges, F-1 steering box, and 4-inch dropped axle maintains the vintage theme.

Cedar Lake, IN, resident Larry Coleman was on hand with his beautiful, home-built '36 Chevy pickup. Larry shortened the stock bed and installed a 350ci small-block Chevy engine and 4L60 trans to power the full-fendered hauler.

Dan Ulreich's '50s-style, flat-black '56 Ford F-100 rolls on red steelies shod in wide whites, matching the white-out under the hood. A Tri-power–equipped small-Chevy was dressed in vintage equipment and flanked by pinstriped panels.

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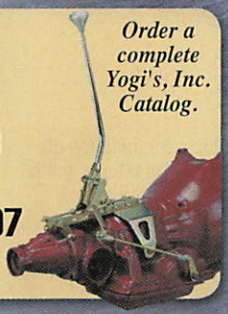

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Steve Hager's Waukesha, WI-based convertible was originally a '46 Ford four-door sedan, but more than 50 body modifications make the conversion almost undetectable. A '51 Olds dash and '49 Plymouth grille and bumpers are among those modifications, as is the rear Air Ride Technologies suspension, S-10 pickup front clip, and Chevy drivetrain.

Jim Ross' all-black '33 Chevy coupe runs a potent Buick V-6 Grand National engine under the hood and was one of the most unique cars at the Chicagoland Nationals. Jim has owned the car for years and said it's been changed numerous times, but as the license plate reads, it's "Stilblk."

Mike Freund debuted this Tri-Five at the Chicagoland Nats to an awestruck crowd. The Meadow Green and Candy mild custom sports a Tri-powered 283ci small-block Chevy backed by a TH350 trans.

Joliet local Bob Cardwell's 1960 Oldsmobile convertible's combination of fender skirts, Fiesta caps, wide whites, and white tuck 'n' roll interior made for one fine '50s-style custom. A 394ci Olds motor powers the drop-top.

Larry DeForrest's '61 Chevy Impala is a classic example of a '60s car built in a street rod fashion. The stock 348ci engine was hopped up to 408 inches and equipped with a Tri-power setup but otherwise appears stock. An Air Ride Technologies suspension gets the hardtop hauler nice and low on oversize Billet Specialties wheels.

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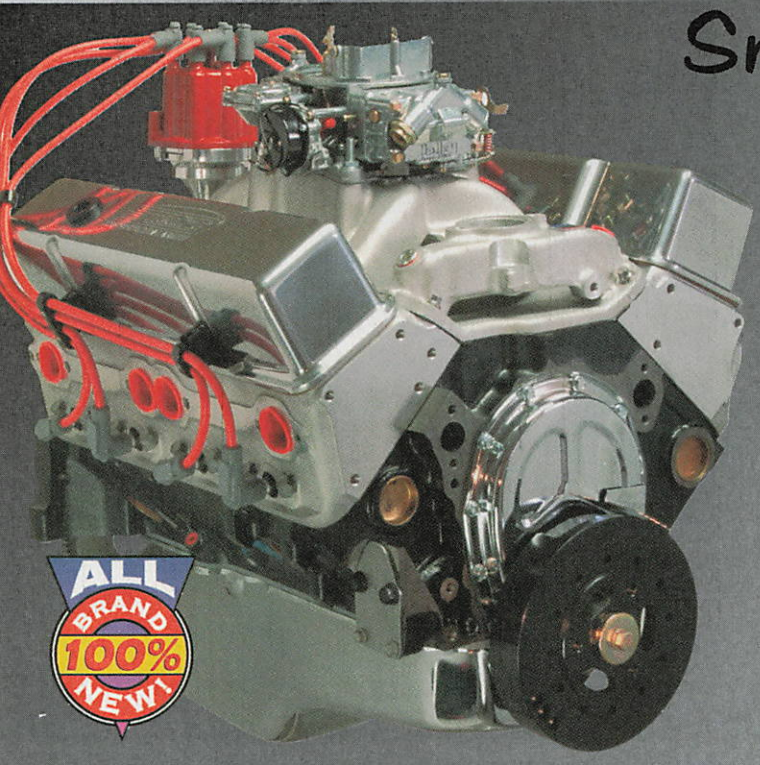

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Smeding PERFORMANCE

BY JIM RIZZO | jim.rizzo2@sourceinterlink.com

PROFESSIONAL PAINT REMOVAL

Stripping paint from any surface is a pain in the butt, to say the least. Over the years, I've spent way more time, energy, burned skin, and more than likely a few hundred thousand brain cells removing old layers of paint using chemical strippers. Then, a dozen years or so ago, I finally graduated to sandblasting. That certainly beat the heck out of caustic chemical stripping, but sandblasting also had its drawbacks—chiefly the dangers of silicosis from breathing the airborne silica dust and the detrimental effect of work-hardening sheetmetal and the aggressive abrasion on non-metallic parts. In these cases, my only options were to go back to the old chemical stripper route or farm out the job to a professional media-blasting outfit—a hassle, at best.

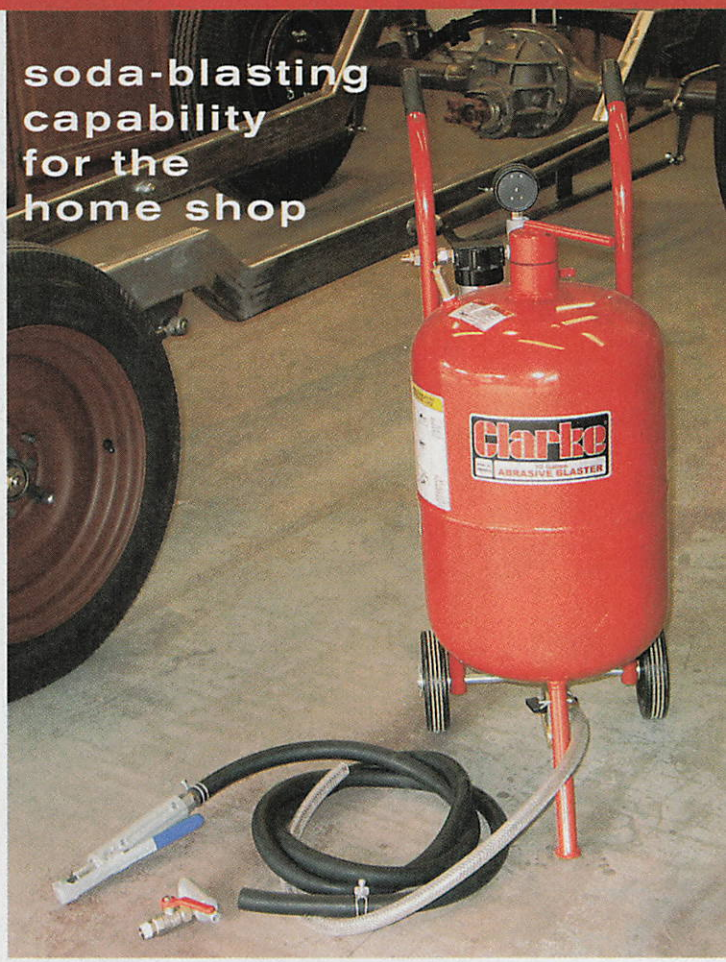
Recently I became aware that one of my favorite tool sources, the Eastwood Company, had made a leap in technology that allowed the home (or professional, for that matter) shop dweller to take advantage of an optional stripping media (baking soda) that has the ability to remove paint without harming the substrate. With my curiosity piqued, I grabbed the phone and dialed up one of my tech sources for the lowdown.

I got Eastwood product development engineer Joe Richardson on the line, and he was more than happy to clue me in on this new development—and here's what he had to say. "Abrasive blasting is an old and proven technology that uses silica sand as a blast media, hence the term 'sandblasting'; however, with the increased awareness of the dangers of silicosis since about 1973 or so, several modern alternative media have been in use.

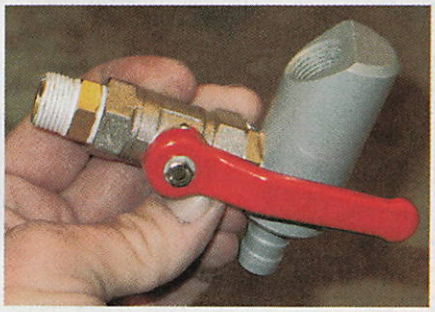
"The most common alternate blasting media are aluminum oxide, silicon carbide, glass bead, coal slag, and aluminum or steel pellets, and more are generally used for paint and coating removal and in some cases, rust removal. All of these media are grains of hard, sharp material that, when propelled at high velocity with blasting equipment, are capable of generating a great deal of heat on the blasted surface, resulting in warped panels and etched surfaces. Traditional abrasive blasting is still best for stripping and removing rust from castings or heavy steel parts, but not the best for stripping paint from autobody sheetmetal and certainly not fiberglass.

"There are some less aggressive media, including poly, walnut shell, corn husk, and others available for the purpose of stripping paint from autobodies; however, they can require a great deal of work to clean up from the area when the job is done and will leave residual particles in seams and crevices of the car body. There is another alternative rapidly increasing in popularity in the form of bicarbonate of soda, more commonly known as 'soda blasting.' The technology is fairly recent, having been developed in the mid-'80s primarily for the purpose of cleaning the Statue of Liberty inside and out—a delicate task requiring effectiveness without damage.

"Fast forward some 20 years and we now have the benefit of equipment easily obtainable to the average hobbyist who wishes



As always, Eastwood offers the hobbyist the latest and best in equipment and supplies to help make that precious garage time easier and much more satisfying. The company now offers several affordable soda-blasting units (PNs 11805 and 11804) to choose from and a selection of soda media (PNs 11806 and 11807) available either online or in Eastwood's catalog. The one pictured here is the 10-gallon capacity Clarke unit (with the Eastwood Soda Conversion) that's now a part of my home shop tool arsenal.



The heart of the conversion from sandblaster to soda blaster is the specialized abrasive outlet manifold supplied with the soda-blasting kit.

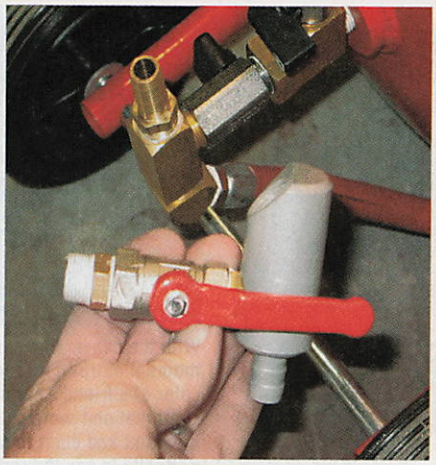
to strip paint from his pride and joy without inflicting damage. In fact, a car can be stripped of its paint while leaving all trim, rubber, and glass *in place* with no harm to those components! Additionally, no panel-damaging heat is generated, and the surface is left smooth and texture-free, even on aluminum and fiberglass. This occurs because the soda particles completely shatter into a dust after striking and removing the paint without harming the base metal or fiberglass. We recently stripped the paint on a vintage car using a soda blaster and discovered original factory sanding marks on the fender—they were actually left intact but the paint was gone!

"The soda will also leave a light, dusty protective film on panels, helping to prevent surface rust for up to several months. This is simply rinsed away with water prior to painting, and you only need to rinse out seams and crevices to remove stray dust particles. Perhaps the best feature of soda is the fact that it is completely inert and water soluble, saving a great deal of cleanup time when the job is done. Of course, the proper steps should be taken to recover removed paint particles before getting out the hose and washing away the dust.

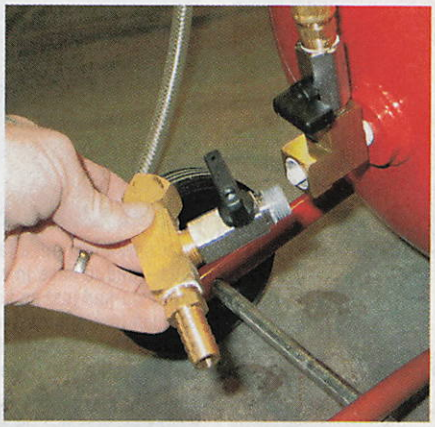
"One additional use of soda as a blasting media is the ability to clean and degrease complex mechanical assemblies, such as transmissions or rear axles, with no harm to internal moving parts. Many folks also use it to clean underhood areas with no removal of or harm to components or wiring."

With this newfound bit of information, and a perfect candidate for a paint-stripping job waiting patiently in my garage, I had Joe ship me one of Eastwood's new pressure blasters and soda conversion kits to see just how well it worked.

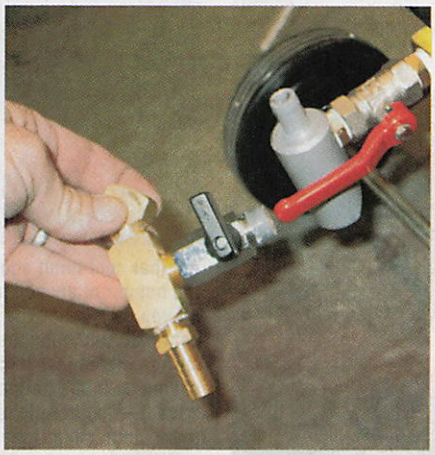
As is always the case with a new piece of Eastwood equipment, I was pleased with just how well it worked. So, with this in mind, I chronicled my Saturday afternoon paint-stripping job so I could share my experience. Take a look and see for yourself how another Eastwood product is making my home shop chores easier, less dangerous, and far less expensive than farming it out to a professional shop. SR



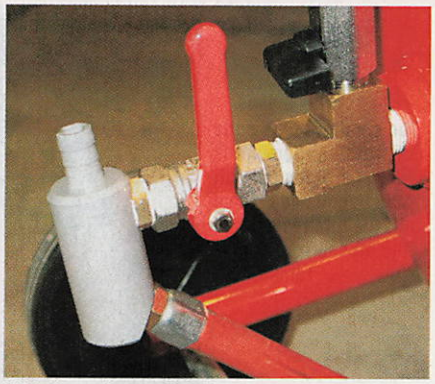
The conversion is a piece of cake and allows one to enjoy the benefits of soda blasting while maintaining the ability to quickly convert the unit back to a traditional sandblasting unit for rust and scale removal. Here's a shot of the soda outlet manifold (in hand) and the standard abrasive manifold still attached to the blaster.



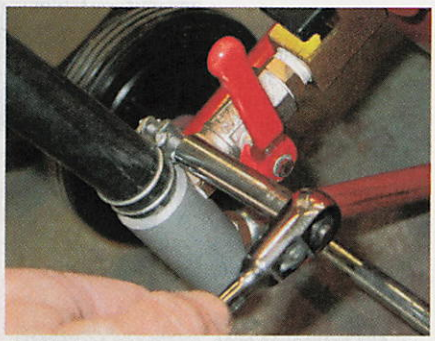
The conversion process takes just a few minutes and is started by removing the standard manifold from the unit.



The soda outlet manifold is then installed in place of the original. This time the original manifold is in-hand and the soda manifold installed.

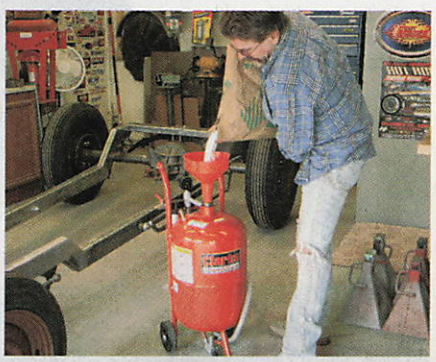


With the soda manifold in place, the next step is to reattach the air supply hose into the angled section of the soda manifold (using a bit of thread sealing tape to prevent any air leaks).



The blast nozzle hose is then attached to the soda manifold and tightened in place with the existing hose clamp. That's it—the conversion's finished!

Eastwood also sells the soda abrasive needed. Here you see a 50lb bag ready for loading into the pressurized hopper.



Heck, Eastwood even supplies a handy funnel for filling the tank (instead of the shop floor).

The smaller of the units (the 10-gallon unit is shown here) fits one full 50lb bag of soda. Once full, the threaded cap of the pressurized tank is reinstalled.

A dry air source is a must since soda is so fine and susceptible to clumping from water contamination. I installed one of those disposable water traps as added insurance. Moisture-caused clumping of the soda is a pain in the butt, as it will clog up the works and prevent an even flow of soda through the blast nozzle.

As is the case with any type of shop equipment, the proper use of safety equipment is crucial. A pair of heavy gloves, a hood to keep the media out of your eyes, ears, and hair, and a good-quality dust respirator (not a cheapo dust mask) is the way to go, and they are all available from Eastwood.

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With the conversion completed and the hopper full of soda, next came the moment of truth. I'd recently painted a steering wheel to match the interior color of a friend's car only to find that the wheel didn't fit the car's steering shaft (yet one more example of my lack of forethought). I wanted to remove the paint and clear to ready it for its next home, and this was a perfect opportunity to see the result and ease of soda blasting.

After spreading out a large tarp to capture the majority of the expended soda—and to ease in cleanup, I proceeded to try out my new soda blaster, and it worked just as advertised! A bit slower than sandblasting, as soda is much less aggressive than other courser medias, the soda removed the paint without harm to the semi-soft surface of the plastic ring, and did so just as well as I'd hoped.

Another cool thing about the Eastwood soda blaster is the ability to empty the hopper of unused media. To drain the unused media from the hopper, all you do is place the end of the clear purge hose back into a suitable container and open the purge valve under the blaster hopper. The pressure in the hopper forces out the leftover media and keeps the soda from caking up in the bottom of the hopper when not in use. And there you have it—another pleasurable experience with an Eastwood product. No more chemical stripper or trips to the local stripper for me! The Eastwood soda blaster is already making my home shop life easier and more productive—but then again, I've never expected or received anything other than success with Eastwood products.

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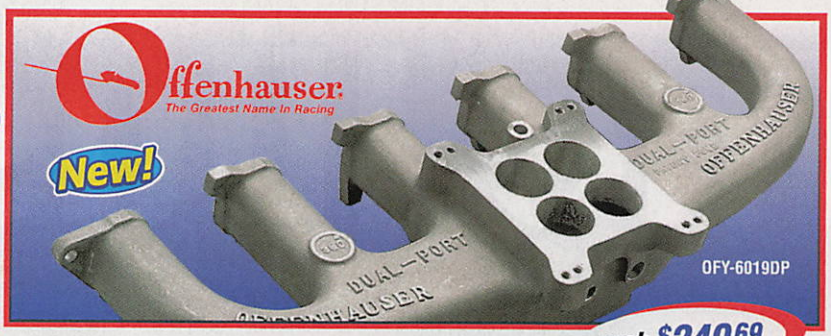

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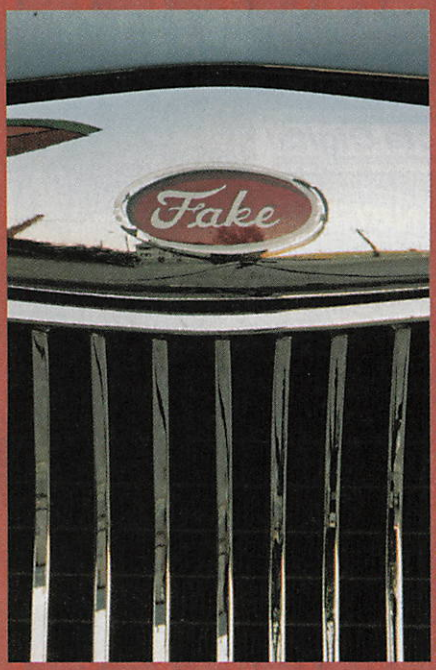

There are dozens of small details added to Van Tyler's 'glass three-window to make it look like a stock steel body (such as the door handles and hinges, trunk handle, and roof insert), but the most telling of all is the "Fake" script where the "Ford" should be at the top of the grille. Those are real knock-offs on the Dayton wire wheels (15x6 and 18x10), and they're wrapped in BFGoodrich 155/85-15 and 275/60-18 rubber.

In case you weren't aware, there are some in the street/hot rod hobby who really care if a particular car is made from fiberglass or original steel. The debate has raged for as long as there have been 'glass bodies, and it shows no sign of slowing down anytime soon (we wonder how they view repro steel bodies in this quagmire).

For those who know their '33 Ford three-windows, there are certain styling cues on the body (shape of the grille, handle on the hood side, glass reveal in the door, etc.) that indicate it is indeed a '33 and not a '34. What's more, makers of fiberglass '33 coupes usually smooth them up by shaving the door and trunk handles plus the door hinges, and offer a filled cowl vent and roof so the customers don't have to do the work themselves.

So when you walk up on Van Tyler's inky black '33, which has all those stock factory items in place, nearly everyone assumes it's a factory steel car, but they'd be wrong. Van's '33 is a faux Ford—made from 'glass and built to look like an original factory body.

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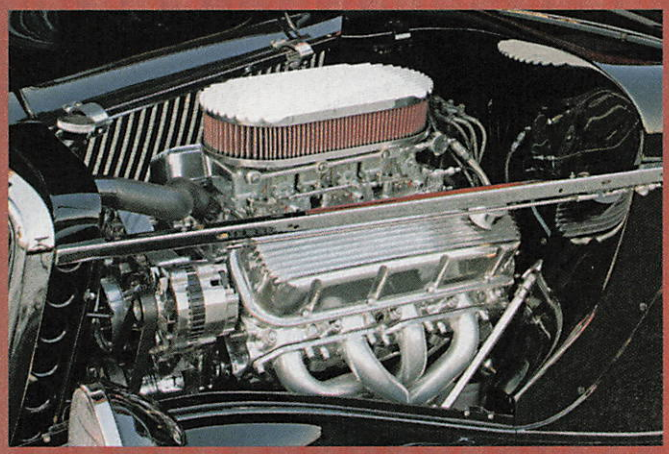
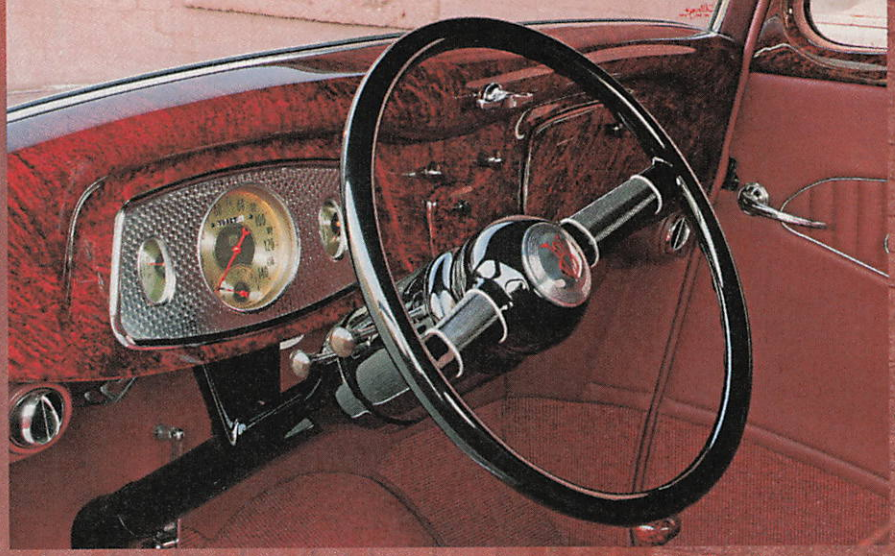
van tyler's faux ford

BY ERIC GEISERT



No one can remember the last time Bobby Alloway installed a small-block in one of his customer's cars, and it didn't happen here, either! A 502 Chevy, with the machining and assembly done at Keisler Racing, uses a Steve Long radiator, a Barry Grant SixShooter induction system, Sanderson headers (with Flowmaster mufflers), Mooneyes valve covers, and a Powermaster alternator to provide more than enough power to get Van down the road.



Wanting to carry the faux look into the interior, a woodgrain 'glass dash (by Glenn Mayes) and garnish moldings really carry off the look. Paul Atkins covered his version of the '34 Ford bench seat with pleated red leather and continued the red hue to the carpet. A Vintage Air A/C system keeps Van cool riding down the road, and the LeCarra '40 Ford steering wheel looks appropriate bolted to the black ididit column. Check out the oval oil temp and volt gauges on either side of the speedo/tach gauge from Classic Instruments—very nice!

Badass from any angle, Van's coupe sits on a 113-inch chassis built at Alloway's Hot Rod Shop. Bobby Alloway used inky-black DuPont paint to cover the car, and the finish is so deep you could almost drown in it! The Winters quick-change is about the only "flash" on the rod's exterior, with the only other color coming from the wheels and '37 Ford taillights.

Van lives in Knoxville, Tennessee, just down the road from where the project would go together at Alloway's Hot Rod Shop in Louisville, Tennessee (except for the interior, which was stitched at Paul Atkins' shop in Cullman, Alabama). Bobby Alloway really knows his way around the '33/34s, and started on Van's car by building a chassis dialed in with a 113-inch wheelbase, making note to bring the rear framerails in 3 inches to give some clearance to the 18-inch wheels.

Wanting the solid axle look both fore and aft, Bobby assembled the front using a Pete & Jake's chromed hairpins and I-beam axle (painted black) with SO-CAL disc brakes (hidden inside fake Buick finned drums), while the back utilizes a polished Winters quick-change (3.25:1), Pete & Jake's four-bar setup with coilover shocks, and another pair of SO-CAL/Buick disc brakes.

In a departure for Bobby (who normally adds traditional five-spoke wheels to his customer's cars), knock-off Dayton wire wheels (15x6 and 18x10) were powdercoated red and shod in BFGoodrich rubber (155/85-15 and 275/60-18). One thing you can depend on in any Alloway hot rod is horsepower. Known for shoehorning big-blocks between nearly every frame he's made, Bobby didn't disappoint when he had Keisler Racing prep a 502 Chevy big-block before adding a Stewart water pump, a Barry Grant SixShooter carb system, and Sanderson headers to allow the exhaust to freely exit the motor. A TH350 trans, equipped with a B&M converter and a Lokar shifter, was then backed to the block.

The body chosen for this masquerade is a fiberglass three-window from Rat's Glass. The rear section of the coupe was tubbed slightly (because of the larger wheels) and it got the rest of its "bumps" (door hinges, trunk and door handles, roof insert, etc.) at Alloway's. Rootlieb supplied the stock louvered hood sides while the hood top is now a one-piece unit (the fact that it isn't a two-piece hood top and the coupe doesn't have a pop-out windshield are the only two "factory" options Bobby could have installed on this otherwise convincing clone). All bodywork was done at Alloway's, too, before the DuPont black paint was sprayed.

Bobby Alloway is known for many things, but not for stitching the interiors of the cars he builds. That is, up until now. He had some extra leopard print material left over from another project and capably lined the glovebox of Van's coupe. Excellent work, Bobby!

The charade continues inside the car with a dash finished in a realistic woodgrain finish by Glenn Mayes. Two oval-shaped gauges (volt and oil temp) are placed on either side of a speedo/tach combo from Classic Instruments and, set into an engine-turned panel, have the look of factory gauges. Using one of his own bench seats, interior wizard Paul Atkins stitched a simple pleated pattern into the seat as well as the door panels, adding a red loop carpet below. Topping off the red interior is a gloss black steering column (from ididit) and a '40 Ford steering wheel (from LeCarra). The Vintage Air climate control system, the Dynamat insulation, and the Sony stereo head unit are hidden from view.

Unless you're savvy enough to know the difference in what a steel door sounds like when it closes versus one made from fiberglass, we bet most folks wouldn't know that Van's '33 is a faux Ford. You'd have to walk up close, and probably closer still, before you realized what you were looking at didn't roll out of the Ford Motor Company more than 70 years ago, but rather a hot rod shop in the Tennessee hills just this last year. Or, upon even closer inspection, you can read what is in the familiar oval at the top of the grille. Ford? No. But in the same handwritten script, it slyly reads "Fake." SR

Deep in the Heart of Texas

BY RYAN MANSON
PHOTOGRAPHY BY THE AUTHOR AND ERIC GEISERT

Texas in the summer can be a very unforgiving place to those not acclimated to the searing heat and brutal Gulf Coast humidity, but when I saw that the Lone Star Nationals weren't until the beginning of October, I breathed a sigh of relief. To make the trip even better, Rick Love and the crew at Vintage Air opened their doors to me and extended an invitation to fly in to San Antonio and hit the road in one of their staff cars. There was only one catch, Rick warned me, "You're driving the only car in the company fleet that doesn't have A/C!" I shrugged it off and assured him that driving to an event in any form of vintage tin would be a welcome change of pace to the cookie-cutter rental cars I've gotten stuck with throughout the year. Plus a chance to drive across Texas with the Vintage Air crew sounded great, so I changed my travel plans to accommodate the couple of extra driving days.

As they say, the trip is sometimes more important than the destination, but in this case we were heading to the Goodguys 15th Annual Lone Star Nationals. A few hours up the freeway in Fort Worth, Texas, is the Texas Motor Speedway, a 1 1/2-mile paved oval super speedway, and our destination for the weekend. We arrived Thursday afternoon after a few Texas Stop Signs (Dairy Queens) to a throng of hot rods at the host hotel and where our registration papers lay, the Doral Tesoro Hotel. After receiving our goody bags, it was off to have dinner and get some much-needed rest.

Friday kicked off nice and early with a handful of guys already tearing up the Street Challenge Autocross course, one of the newest and fastest-growing features of many of the Goodguys shows this year. If that weren't exciting enough, for a hundred bucks, Team Texas would take you on a 140-mph Rocketship Ride around the big, paved oval. All these high-octane activities were of course eclipsed by the 3,000-plus cars that cruised in to the speedway from all the southern United States and Mexico.

Saturday included many of the same attractions, including the specialty parking areas—Homebuilt Heaven, Deuces Are Wild, Fins Are Fifty, Ya Gotta Drive 'Em, and the Goodguys' *Pro's Pick* Area. In addition to the specialty parking areas and more than 80 awards given out by the Goodguys staff, *STREET RODDER* was on hand to conclude our *Top 100* event sponsored by Turtle Wax. It hasn't been easy picking 100 of our favorite cars, trucks, hot rods, and customs, but the field has definitely come to represent some of the best vehicles out there, regardless of budget, style, make, model,

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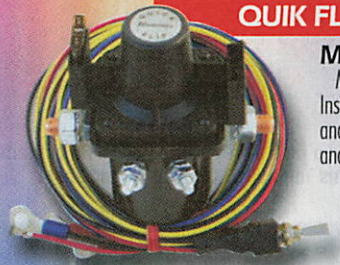

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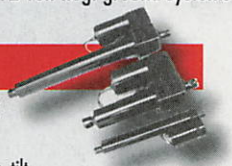

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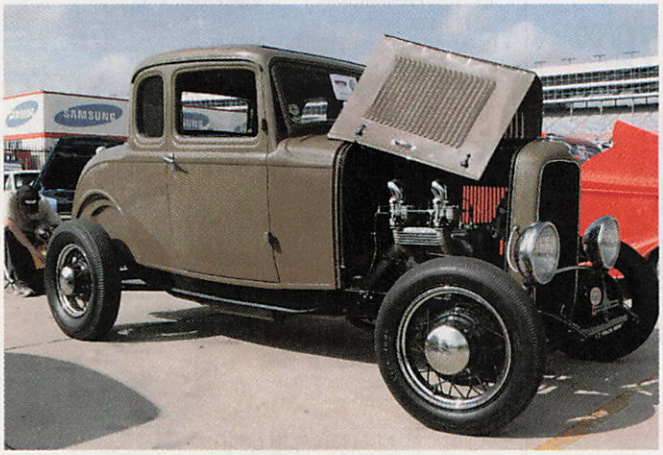
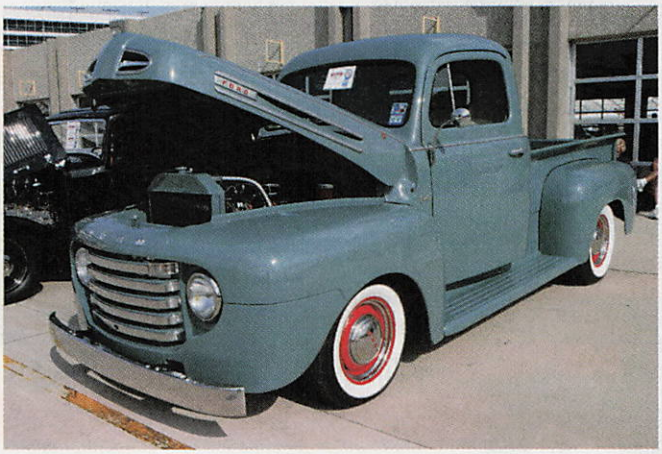
Stephen Sack of Central City, NE, kept his '33 Plymouth all Mopar by wedging an injected 392ci Hemi beneath the hood top.

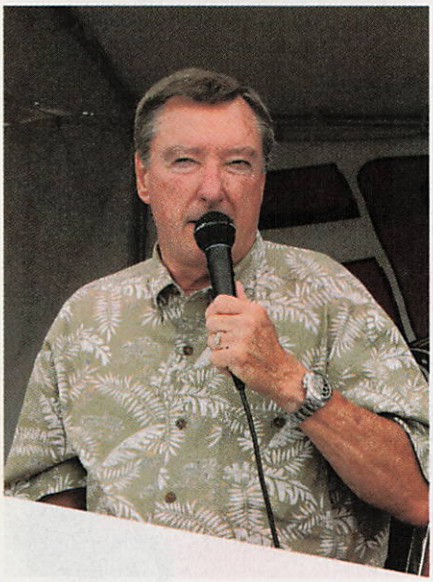
Sean Ornduff's '27 Ford roadster pickup runs a Tri-powered 364ci Buick Nailhead engine and bares the name of his Tomball, TX-based hot rod shop.



The Goodguys *Gazette Pick* went to Guy Weintraub and his 'banger-powered '32 Ford five-window coupe.



Eddie Hopper had one of the cleanest F-1 pickups we'd seen in years. The '48 Ford hauler retained the stock motorvation in the form of an 8BA Flathead and was chosen as the *Body Coddington Pro's Pick*.



Three-time Indy 500 winner Johnny Rutherford was on hand Saturday dazzling the crowd with high-octane tales of his racing days.

Ken Reister and Bud Wolff's low '60 Chevy El Camino is definitely worth a closer look.

or year. Check out www.streetrodderweb.com for the results of this year's *Top 100* program and to see who closed out the field as the 2007 *Street Rod of the Year*.

Luckily, the Texas weather was moderate and quite comfortable for our traveling crew, and we all made it back to Vintage Air headquarters in San Antonio after ogling over all the winners on Sunday morning. A big thanks goes out to Rick Love and the crew at Vintage Air for getting me to Fort Worth in style and treating me to the only way to attend a Goodguys show—behind the wheel of a hot rod! SR

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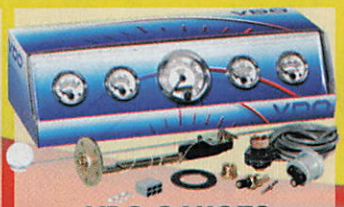

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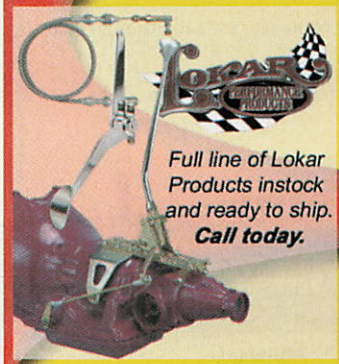

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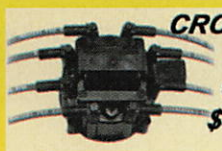

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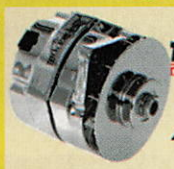

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Satin copper paint on whitewall-clad American five-spokes is a winning combination on Michael Taylor's '59 Chevy pickup.

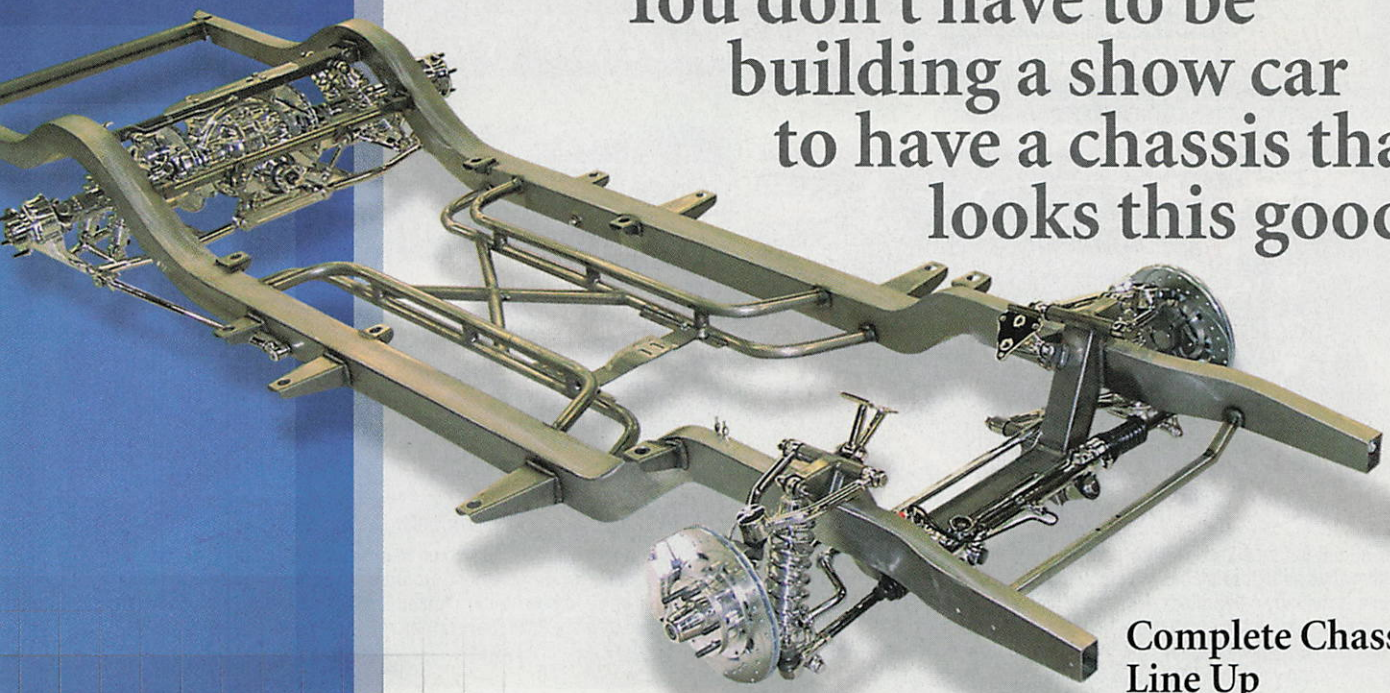
Dicky Patterson's Springtown, TX-based Model A coupe drew quite a crowd all weekend long with its well-worn and channeled look.

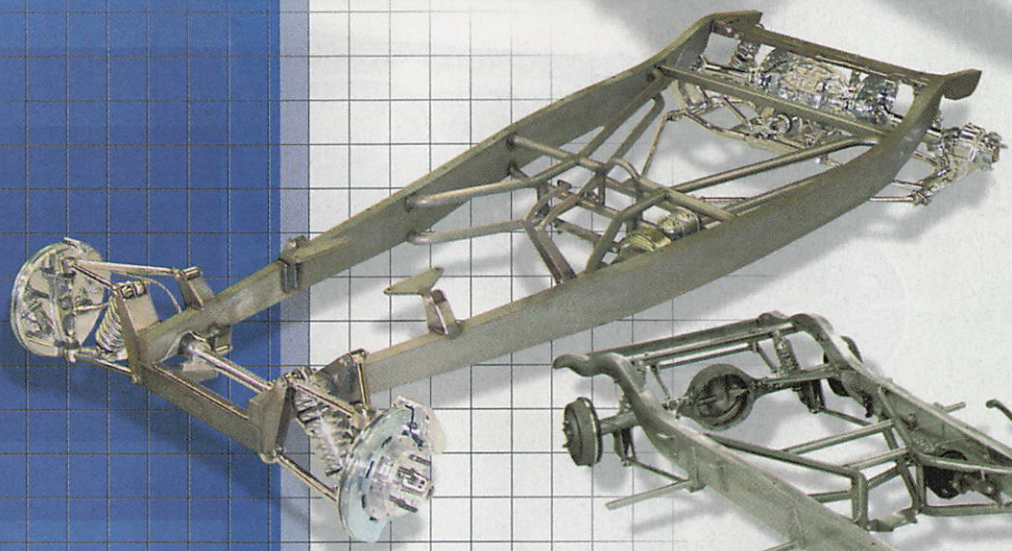
The Street Challenge Autocross course was getting a serious whooping all weekend long, but in the end it was Gene McKeever's '32 roadster that took top billing in the Street Rod class.

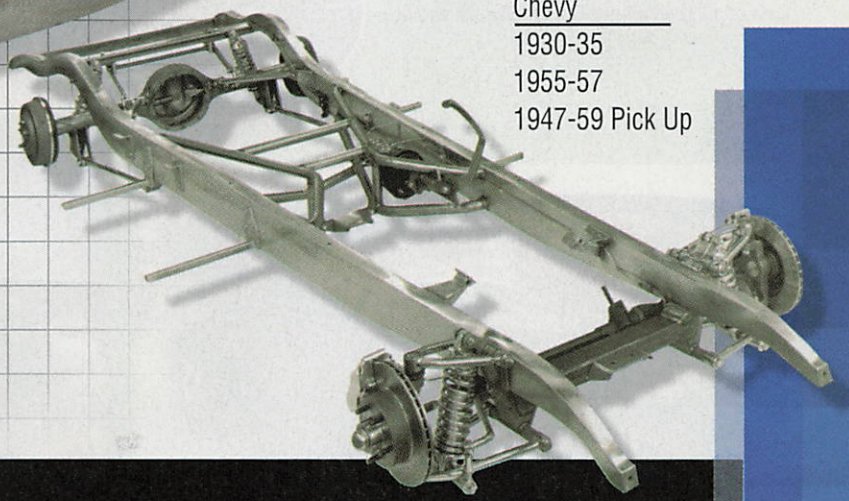
Frank Pendleton got the nod for the oldest automobile at the event for his 1902 Oldsmobile replica runabout. But the question remains: Is it a street rod, or a hot rod, or a resto rod, or a ...?

Judging from this pair, it's fair to say that Nathan Hale has a thing for '54 Chevys. The Lewisville, TX, native lays claim to both low-riding Chevys.

You don't have to be building a show car to have a chassis that looks this good!







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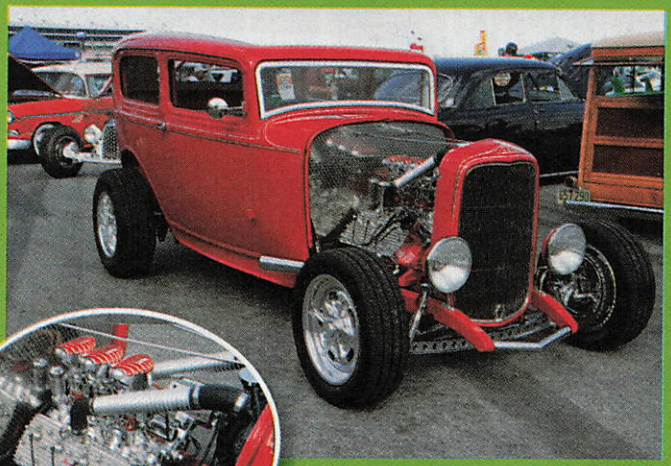
Fresh from Bobby Alloway's shop earlier this year, Van Tyler's '33 Ford three-window has been turning heads wherever it shows up. The stock-appearing coupe is actually a fiberglass body the Alloway crew made look stock by adding door hinges, a top insert, door handles, and numerous other subtleties. In traditional Alloway fashion, the '33 is (over)powered by a dual-quad–fed big-block Chevy engine. (See page 88 for more on Van's '33.)

There were a half-dozen very clean station wagons on hand at the Lone Star Nationals, including Greg Gerhard's '59 Ford Country Sedan. The black and white family hauler cruised in from Carrollton, TX, on Air Ride suspension and big Billet Specialties rollers. Power comes in the shape of 352 ci of genuine Ford power.

Who'd have ever thought that station wagons could look so good? Settin' 'em in the weeds and slappin' on an oversized set of rollers and a custom paint job seems to be a formula that works extremely well. Take Bruce and Judy Ricks' 1957 Oldsmobile wagon, for example. Riding on 18- and 20-inch Boyd wheels and sitting nice and low, this is one custom grocery getter. Power comes in the form of a 3x2-equipped Olds Rocket J2 engine.

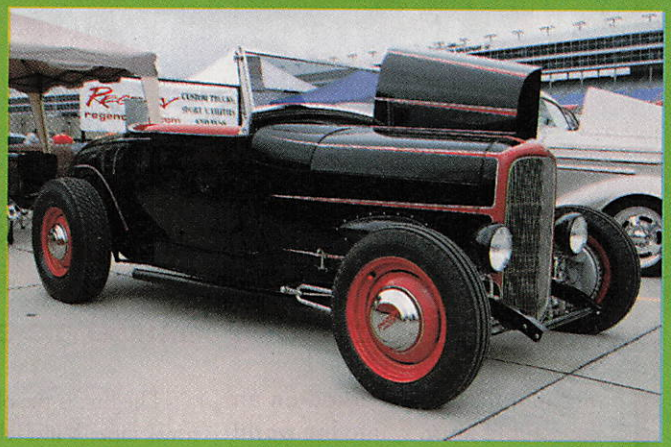
Mike Davis' rare '33 Ford phaeton is only one of the Davis family's hot rods. In addition to a very clean Ford woodie, Mike's tub runs a 302ci small-block Ford backed by a C4 auto trans on a Total Cost Involved chassis with a Heidt's IFS frontend. Gary Vahling of Masterpiece Rodding handled assembly of the perfect Ford.

Scotty and Nancy Gray cruised in to the Texas Speedway all the way from La Habra Heights, CA, in their 1958 Chevy Del Rey five-window wagon. The low and sleek hauler is powered by a four-speed–backed, 502ci big-block Chevy and rides on big Intro wheels.

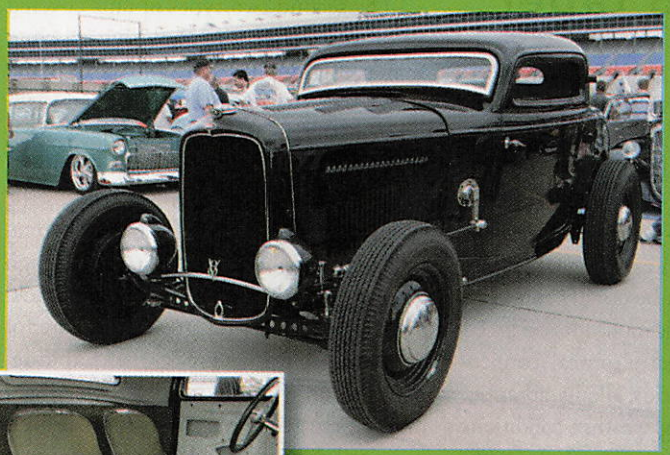


Don Smith's Beach City, TX-based '32 Ford sedan has received a few changes lately, including the wheels and tires, and it has never looked better! The red Deuce is powered by a Sharp-equipped Flathead with all the polished and chrome dress-up goodies. Inside, red and white tuck 'n' roll keeps with the vintage vibe of the rest of the hot rod.

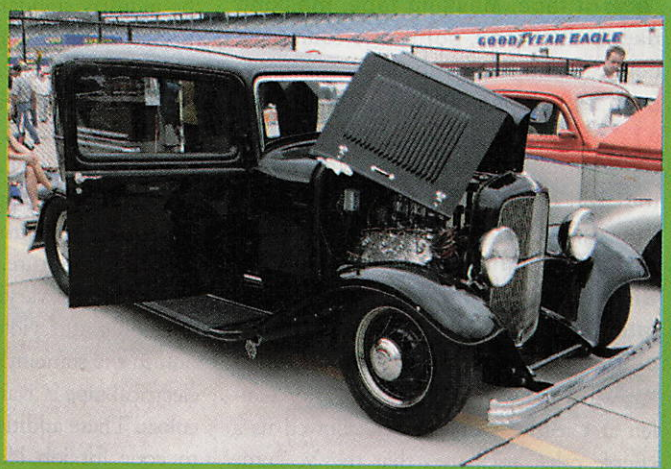
Mark and Angie Sowell cruised in to Texas from their Tulsa, OK, home in their gorgeous Audi Red '49 Ford convertible. Under the owner-built-and-painted body is a detailed chassis that rides on a Mustang II IFS, 9-inch Ford rearend, and is powered by an LS1/4L60E combo. Big Boyd wheels and a number of body mods help smooth out the panels and create a modern look for the vintage Ford.



Bill Wiemann's Phoenix, AZ-based '29 Ford roadster is hot rodding at its best. Built in a '50s fashion, the roadster is powered by a fitting Buick Nailhead motor of proper vintage and rolls on red steelies shod in Firestone dirt track tires. Red leather interior with white piping contrasts the black and scallop exterior beautifully.

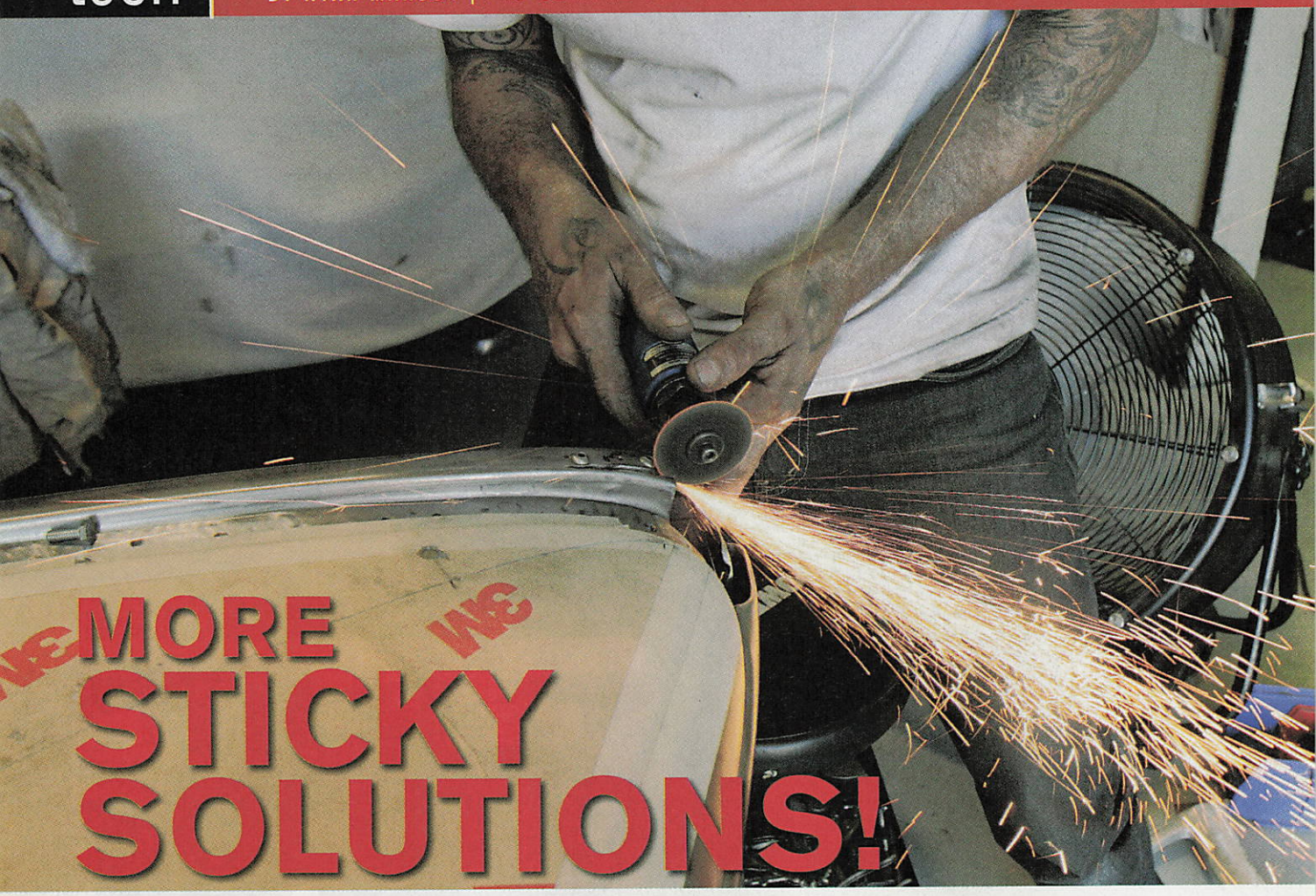


We first caught a glimpse of Larry Roller's immaculate '32 three-window coupe at the Goodguys Hot Rod Nationals where it was a runner-up for the Goodguys *Hot Rod of the Year* award. That close running not withstanding, Larry's still a winner in our book! His aircraft-inspired coupe won a *Top 100* award at the Lone Star Nats for its wicked chop, perfect stance, and overall use of some very trick parts.



One-of-a-kind is the only way we can describe Don Smith's unbelievable '32 Ford sedan delivery. The very traditional Deuce delivery sported an Edelbrock-equipped Flathead topped by a trio of Stromberg carburetors. The blacked-out Deuce was definitely a show-stopper and a rare example of classic Henry Ford steel.

BY RYAN MANSON | PHOTOGRAPHY BY THE AUTHOR AND SUNBURST MEDIA



MORE STICKY SOLUTIONS!

tacky tips for the advanced taper

Last month, we embarked on an incredible journey into the world of tape. Masking tape, masking paper, duct tape, soft-edge foam—we covered the basics in paint and body prep tape applications. While perhaps a bit of a yawn-fest for some, we hope others got some useful information that will help them out the next time they tackle some paint and bodywork. Using the right materials for the job will yield a finer finished product and oftentimes make the job much simpler and quicker to complete.

While we were visiting with Zane Cullen at Creative Concepts, he showed us a couple other trick uses that they've come up with out in their fabrication shop. Not dealing with paint necessarily, we decided to split up those into a different story and also add a couple other useful tape applications.

The first is the old standby—vinyl electrical tape. Vinyl electrical tape has been the industry standard for insulating, organizing, labeling, and harnessing wire and cable for some 65 years. Sometimes used in conjunction with wire loom, it is great for wrapping numerous wires together to create a bunch that can then be cleanly run from the source to the application. It is designed to insulate and protect electrical connections from moisture, acids, alkalis, abrasion, corrosion, and varying weather conditions (including ultraviolet exposure). In addition to the standard black, Scotch 35 vinyl electrical tape is available in nine additional colors. These additional colors can be used to code for job identification and safety, and automobile enthusiasts may find that the available colors are most aesthetically pleasing or aid in the organization of their particular wiring needs.

The second two types of tape covered are great for protecting, holding, splicing, or masking applications and were being utilized in the aforementioned fab area at Creative Concepts. The orange tape is Scotch Flatback 2525 and was being used to protect a piece of stainless trim as the fender was being sanded using an orbital sander. Its high adhesion strength, high temperature resistance, and high backing strength make it a great candidate for protecting sensitive areas when sanding, welding, or grinding nearby. The second tape we spotted being used was an aluminum foil tape. The dead-soft aluminum foil backing tape provides excellent heat and light reflection to protect against high temperatures and also serves as an excellent barrier against moisture, dust, flame, and certain chemical strippers. The dead-soft aluminum backing also makes it malleable, which means it can be conformed to contoured shapes and will

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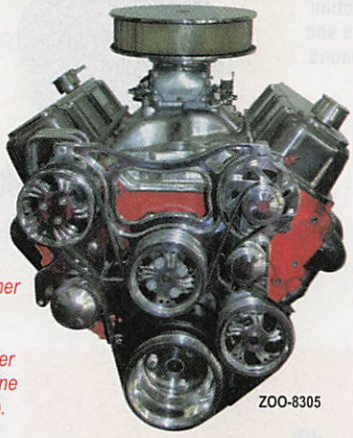

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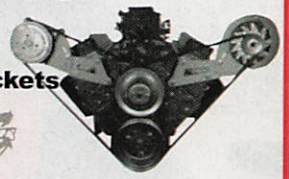

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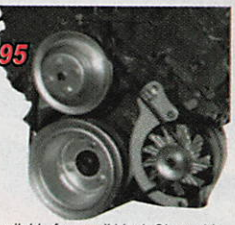

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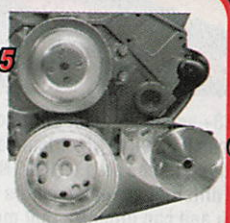

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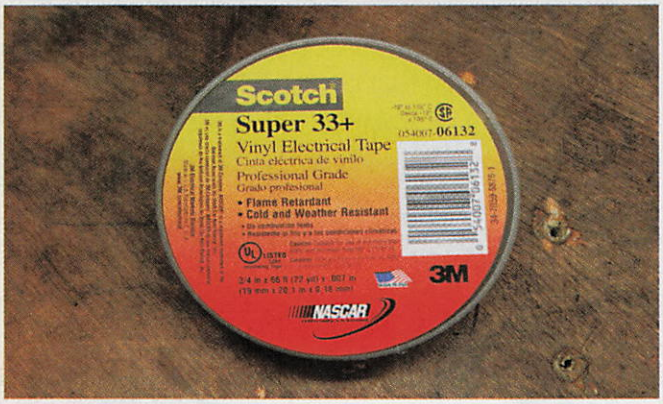
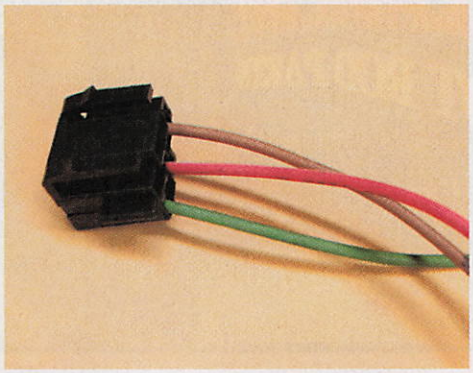
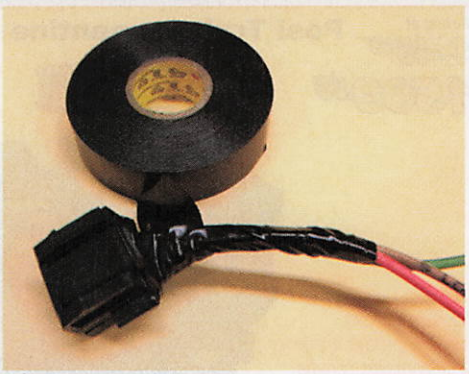


Here's a roll of Scotch Super 33+ black vinyl electrical tape—a premium-grade, 7-mil-thick, all-weather vinyl-insulating tape. It's designed to perform continuously in ambient temperatures up to 220 degrees Fahrenheit, which means it's great for under hood applications, and it has excellent resistance to abrasion, moisture, alkalis, acids, corrosion, and varying weather conditions. Typically used to insulate wire and cable splices up to 600 volts, it's also great for harnessing all those tangled wires under the hood and dash. Note the UL listing. This means that this tape product is designed as an insulating tape and has fire-resistant characteristics and will not catch fire or burn when overheated. Non-UL–listed tapes could catch fire and burn like a petroleum product, taking your car with it.

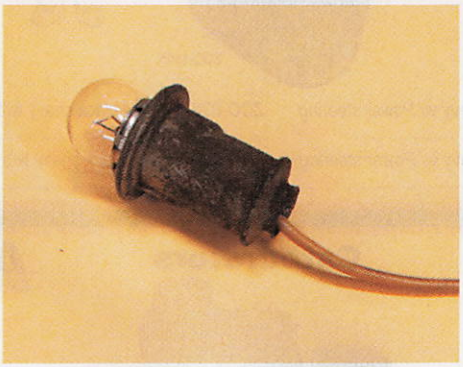
Black Super 33+ works great for automotive wiring, but for the discerning enthusiast, Scotch 35 vinyl electrical color-coding tape takes the insulation and organization job one step further. Nearly identical in spec to Super 33+, the nine different available colors make job identification and safety coding a cinch and can organize that messy rat's nest of a wiring harness.



A plug like this, if left as is, exposes the connectors to moisture and elements that can result in poor electrical conduction.



Wrapped in a single sheath of Super 33+, the connection is moisture-free and the wires are bound and organized.



Old dash lights, taillights, license lights, or turn signals sometimes have a pigtail wire running out of the housing such as this one. Originally, this unit had a rubber boot to keep out moisture, but it's since decomposed over the years.

Using brown Scotch 35 electrical tape, the pigtail and housing is sealed from the elements and color-coded so as to not get confused with the other pigtail light assemblies for the car.

maintain that shape fairly well, useful in backing up areas to receive body filler, patch panels, etc.

Welding and spark deflection paper is a great way to protect working surfaces from welding spatter and grinding sparks. Available in 24-inch-wide rolls, the flame-retardant, repositionable, adhesive-backed paper is an inexpensive solution to protecting glass, paint, and other damageable surfaces from spatter, sparks, and debris.

The last item covered is a relatively new item from 3M called Smooth Transition Tape. After listening to body shop painters' pain points, 3M developed a tape to virtually eliminate rework

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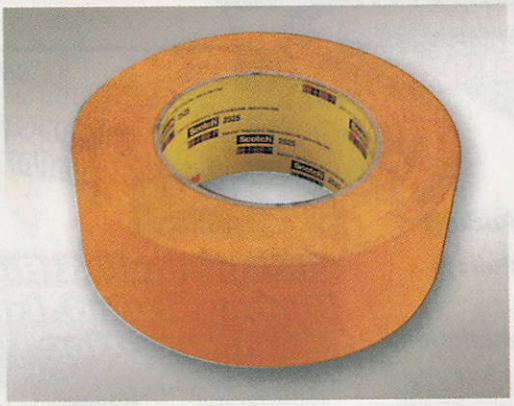
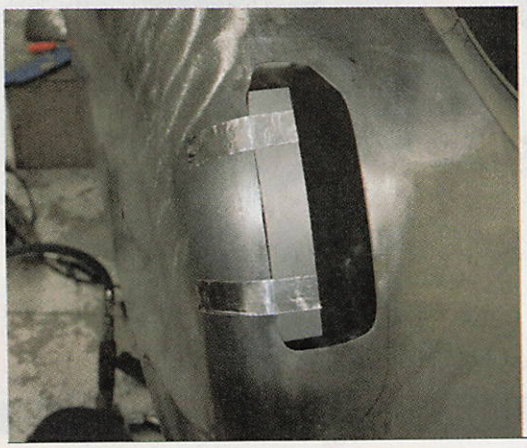
Scotch 2525 Performance Flatback tape is used in holding, splicing, or masking applications where high adhesion strength, high temperature capability, and high backing strength are required.



Its excellent adhesion, backing strength levels, and resistance to high temperatures make Scotch 2525 Performance Flatback tape great for protecting chrome, aluminum, and stainless trim when local repairs are necessary, such as when welding, grinding, or sanding. The bright orange coloring makes it great for holding, splicing, or masking applications where a high visibility tape is desired.

Similar to the Scotch 2525 in application, this aluminum-backed tape is also a practical, easy way to use as backup for plastic filler on rusted-out areas. The thick aluminum backing makes the tape strong and rigid, unlike standard masking tapes, while maintaining the same extremely high-strength adhesive qualities.



Scotch 2525 also works great to hold patch panels in place while being fitted or tacked. The patch panel can be checked and rechecked for fitment numerous times without losing the adhesion properties of the tape.

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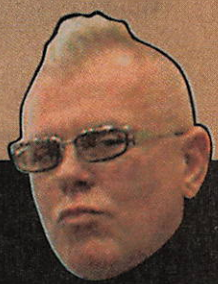

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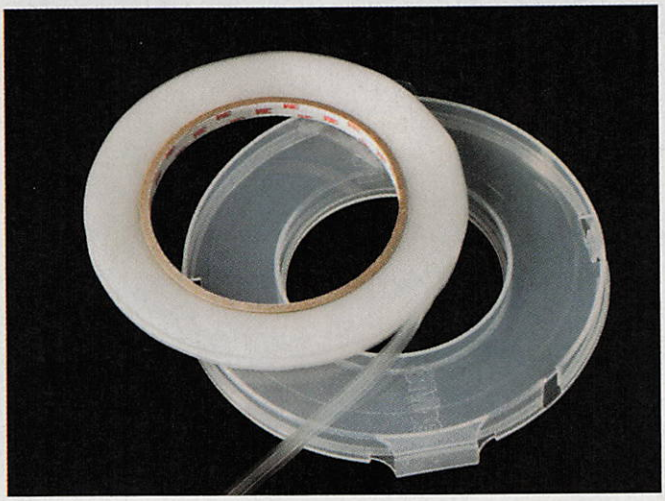
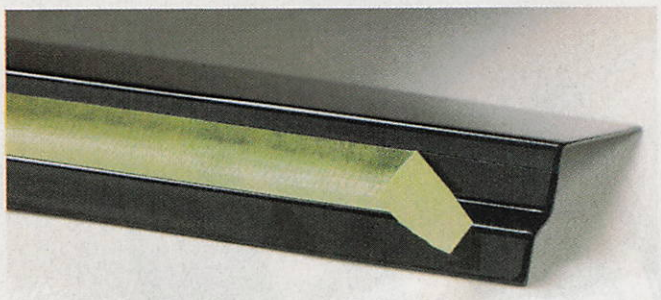
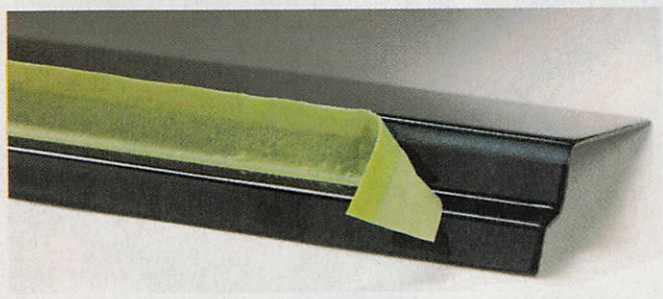


One of the newest products from the 3M company is Smooth Transition Tape, developed to virtually eliminate rework caused by poor paint transitions. Unlike traditional tape/paper systems that can leave distinct hard or visible paint lines, Smooth Transition Tape is designed to allow painters to feather the transition between existing and new paint.

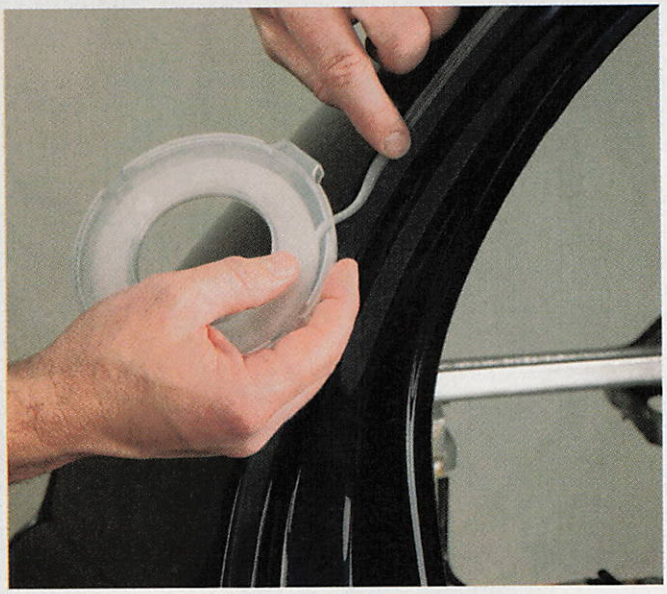


In the past, blending reworked areas resulted in a hard, visible paint line due to the hard edge left by the tape.

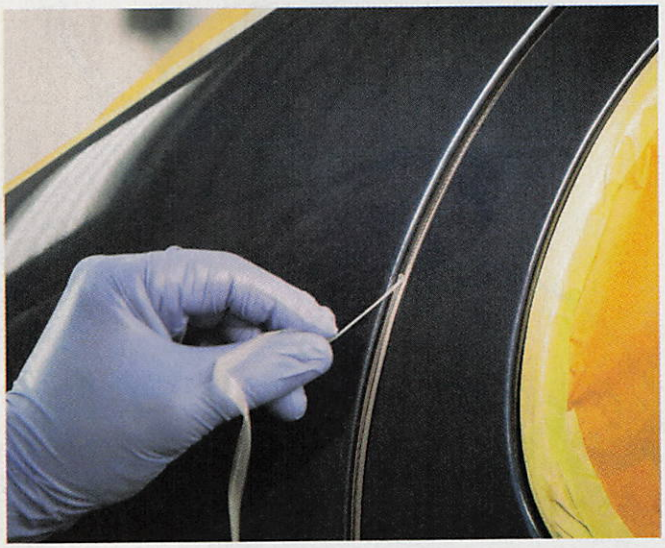


One technique used to try to alleviate this symptom was to fold the edge of the tape and allow the paint to feather toward the tapeline. This process worked on certain areas with mediocre results.

to keep in mind is that while all tape and masking products were designed with a specific task in mind, it doesn't mean that their usefulness should be limited to that particular task. Many of these tape products can be used for numerous applications, such as the aluminum foil–backed tape. Remember to use heat-rated tapes in applications that will be witness to any type of heat or hot debris, and always check the temperature rating if you're not sure. That sheet of masking paper being used to block welding spatter may in fact catch fire and cause more grief and aggravation than it was intended to avoid. SR



Smooth Transition Tape eliminates paint lines that would otherwise require re-shooting, sanding, and buffing by featuring adhesive down the center of the tape, while the edges are adhesive-free. This allows coatings to feather under the edge of the tape.



On an external bodyline such as one that follows the contour of a rear window, the absence of a paint line due to necessary rework is of utmost importance. Here, Smooth Transition Tape was used to feather a reworked area into an existing painted surface without leaving a paint line, making the entire procedure much less time consuming than traditional tape line methods.

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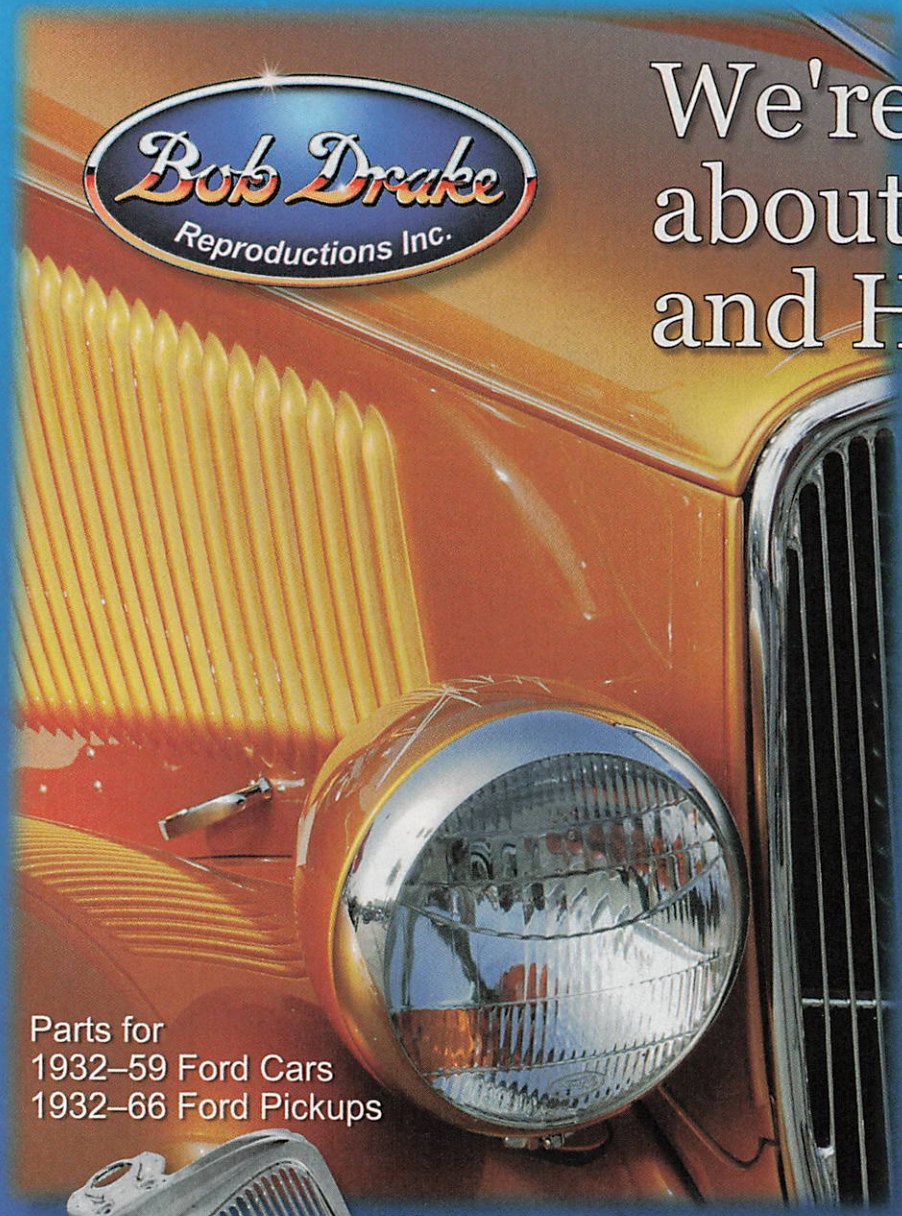

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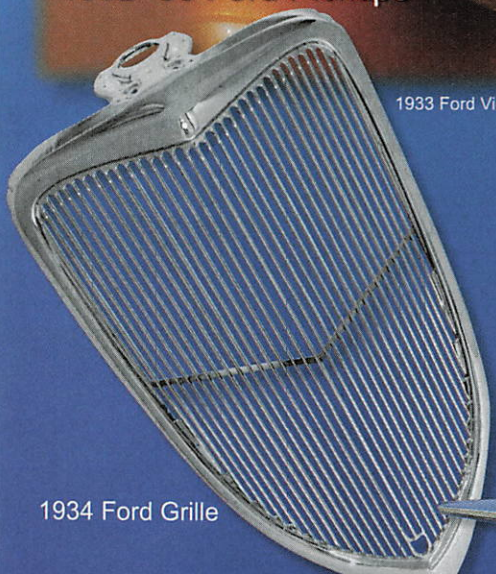

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Roadster Rhinoplasty: Part III

wrapping up the track nose for the project potvin roadster

One of the most exciting aspects of any project is when it really starts to take form and begin to actually look like something. For the past year or so, my '29 roadster has slowly begun to look like a car. Starting with two halves of an original roadster body and a set of drawings on my shop floor, I built a custom full-tube chassis, mounted the engine, trans, and suspension, and reunited the body. It's slowly taking shape, but still has yet to actually look like a car due to the lack of wheels and tires and any front sheetmetal. But the latest development in the build is hopefully going to change all that.

Last month, we started the track nose for the front end of the Project Potvin roadster and finished with the two halves hammered out and ready to be welded together. We also covered how the initial shape was developed using a buck made from the front dimensions of the '29. This told us everything we needed to know to get the desired shape and the dimensions necessary to clear the front framehorns and suspension items. And so, with buck in hand, I headed out to Elgin, Illinois, where Sam Waltermire at the Roadster Shop fabricated the first half of the track nose.

An interesting thing happened once the two halves of the track nose were joined together—the shape became very apparent, whereas before no matter how hard you'd squint or imagine, there was a sense of skepticism about what the finished product would look like. Once those two halves were joined, however, the shape it was taking on was very obvious as you walked around it, and thankfully it was looking good. I've heard horror stories about track noses and how guys have built two or three before finally getting it right, so to say I was a bit nervous right off the bat would be putting it mildly.

All in all, though, it really looked nice once the halves were welded together. A pie cut was taken from both the top and the bottom to get a more streamlined shape, but that was a very minor hiccup and more of a tweak than any kind of major modification or mistake. Once Sam welded the two halves together and knocked down the weld bead, it was treated to some more time in the planishing hammer, perfecting all the high and low spots before it was crated up and shipped out.

With the nose in hand, it was mocked into position on the car and many hours were spent studying the lines of the front end. The hood lines looked like they'd flow from the cowl into the nose as expected and some notching would be necessary to clear the suspension as well, but other than that, everything seemed to gel perfectly. An inner structure will be fabricated to support the hood and nose off the frame and will also serve to mount the radiator over the axle, inside the nose. Dzus buttons will be used to fasten everything into place to ease installation and removal of both the hood and the nose. A grille shell will also be fabricated and fit into the front of the nose to allow airflow through the radiator and into the engine compartment. There's lots more to come, but for now, check out the final installment of this roadster's rhinoplasty. SR

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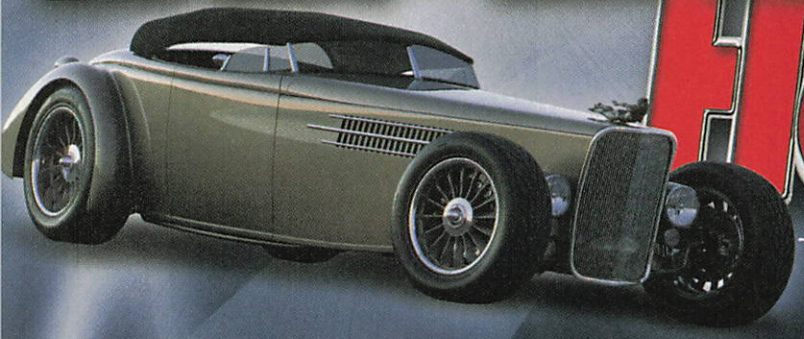

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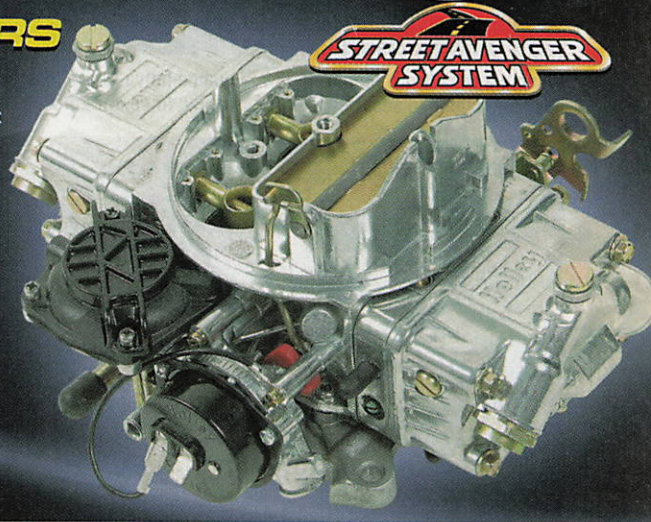

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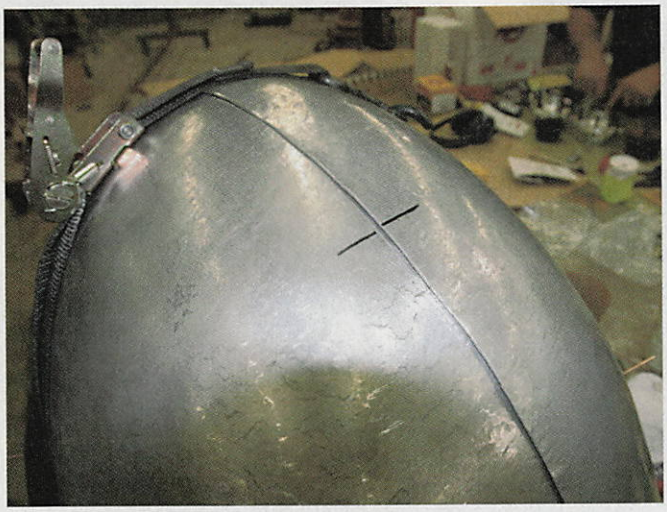
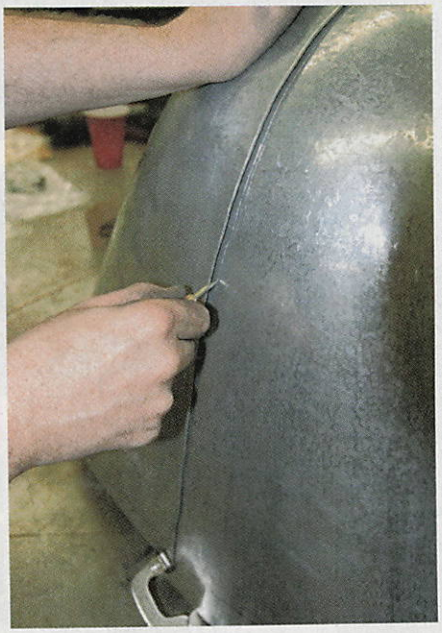
When we left off last month, the two finished halves were installed on the buck and clamped securely in place, waiting to be united.



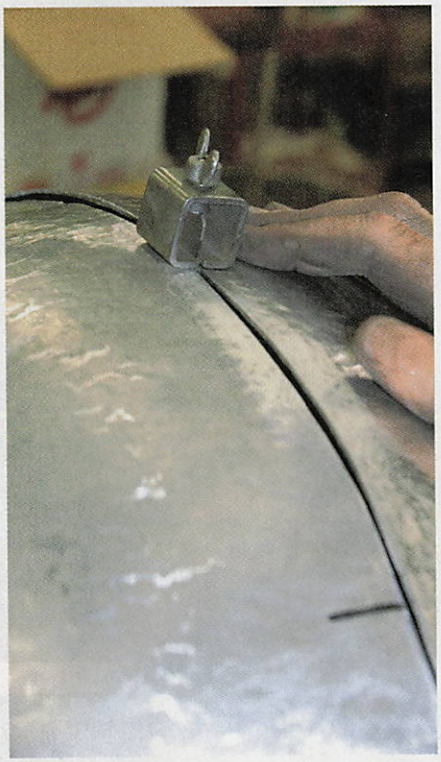
The two halves slightly overlap and need to be marked and trimmed to fit. Before that, though, hash marks were made to help orientate the two pieces back together once they're trimmed.



A scribe is then used to mark where the one half overlaps the other. The larger of the two sides will be trimmed to meet the other.

A pair of shears is used to trim a way the extra material.

Once the excess piece was trimmed away, we noticed how much thicker that area was due to all the shrinking necessary to shape the front of the track nose. The worked piece is about .030-inch thicker compared to a piece of the original gauge aluminum.



Panel clamps are used to hold the two halves together while they're tacked. The panel clamps align both pieces edge to edge and surface to surface, leaving a .040-inch gap for full weld penetration.

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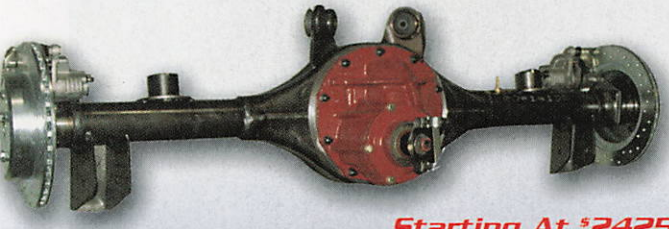

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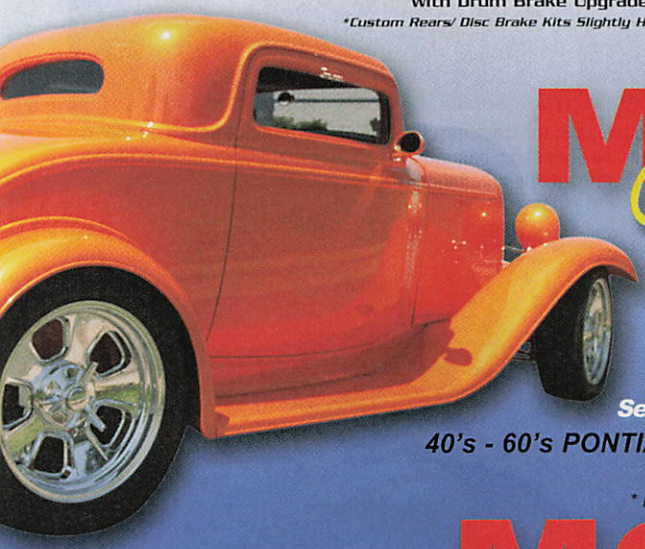

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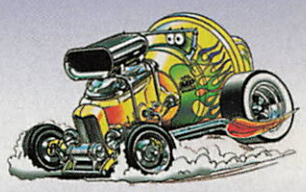
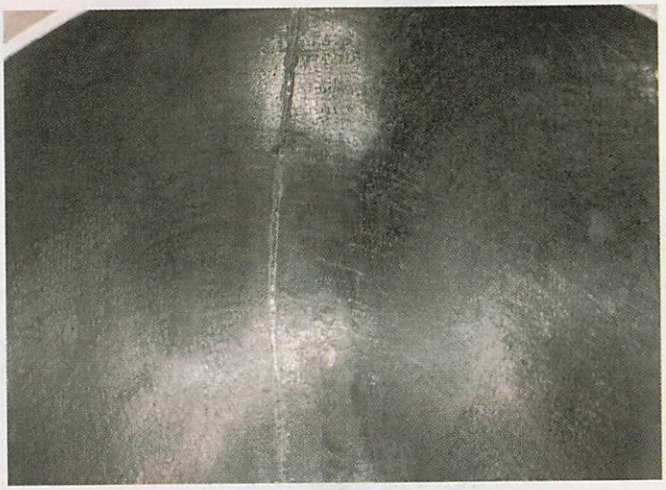
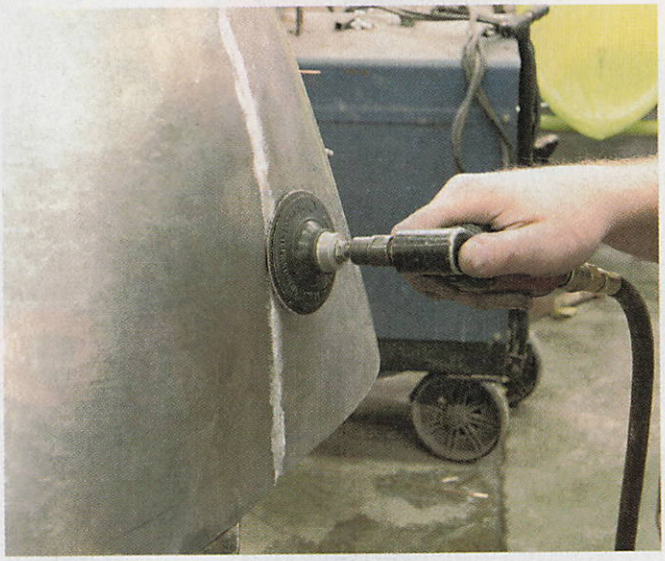


The front-most section is tacked first, alternating from side to side, working toward the rear.



Here's the inside of the track nose after it's been welded. Notice all the marks from the planishing hammer. Also notice that the weld seam penetrated fully through the aluminum skin.

Once the two halves were tacked together, it was decided that the profile needed to be slimmed down somewhat. A pie cut will be removed from the marked section and rejoined to the other half.



The next step is to knock down the weld seam and begin the finish work on the nose now that it's one piece.

The welding process caused the aluminum to warp slightly along the seam so a few minutes in the planishing hammer is necessary to get the crown nice and even.

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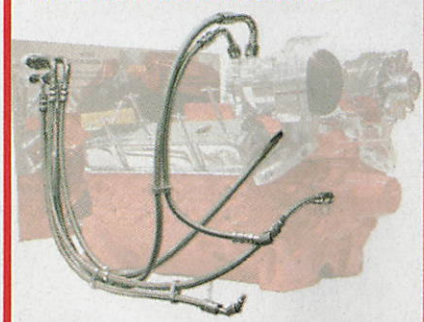

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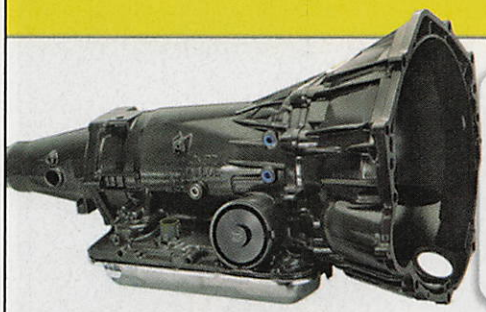

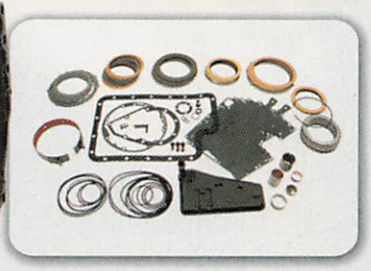

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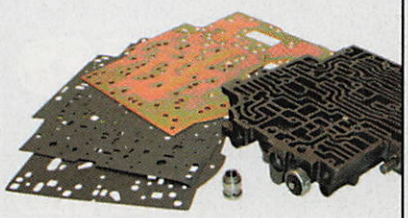

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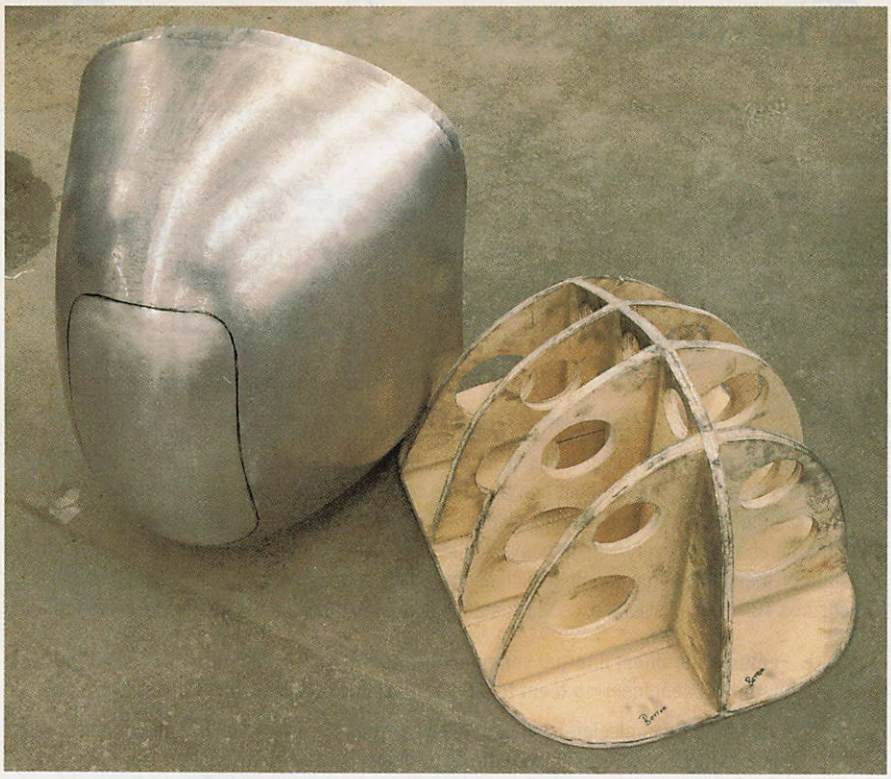

Here's the finished track nose and buck. A mock opening is marked on the nose to simulate the grille that will eventually rest there.

A stepped edge is fabricated along the entire backside of the nose so the full hood has something to engage, much like a stock grille shell has.

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With the nose complete and mocked in place, the front end of the roadster is starting to come together. The lack of a front wheel or any front suspension makes the front end seem extremely long, but it's only slightly longer than a stock Model A with a hood length of 34 inches.

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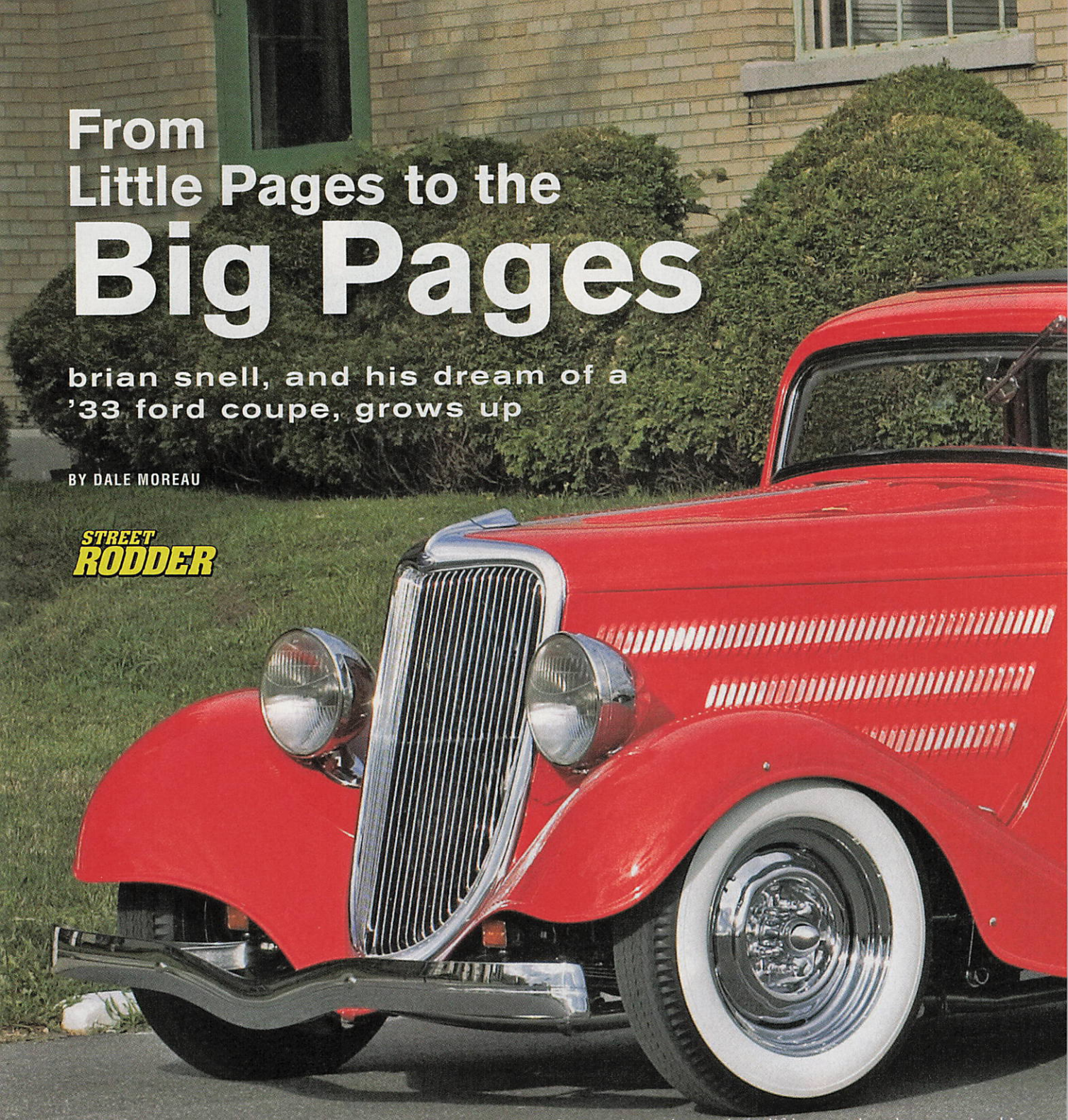
From Little Pages to the Big Pages

brian snell, and his dream of a '33 ford coupe, grows up

BY DALE MOREAU

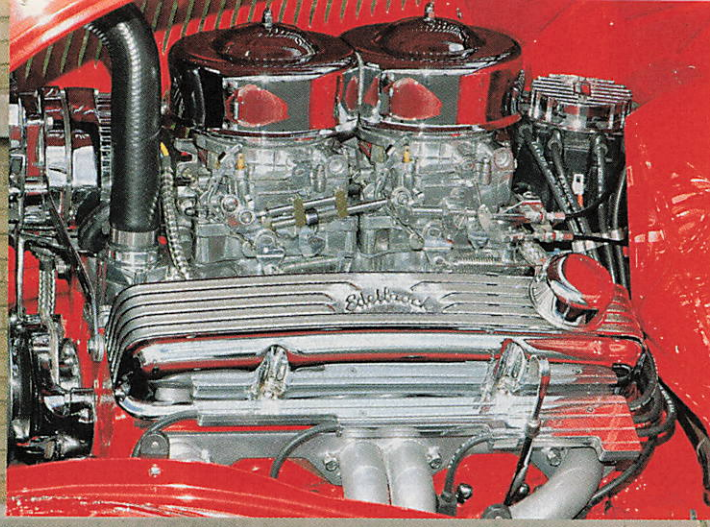
STREET RODDER



Brian Snell already had an interest in old cars at age 16. He liked hot rods and was accumulating a collection of "little pages" magazines full of how-to articles when he found this '33 Ford coupe sitting in a field. That was 47 years ago. He thought he had hit the jackpot when he found the car and liked it so much he made it a keeper.

The car was in fair condition but not running, but Brian quickly paid the $50 purchase price and brought the car home. It wasn't long before the coupe received an Oldsmobile V-8 engine, dropped front axle, and juice brakes to become a drivable rod. In 1962, other priorities forced Brian to store the coupe in a barn. He joined the Navy, got married, and built a house—a progression along life's normal paths many in this hobby have traveled.

Brian hauled the car out of storage 20 years later and began a rebuild that would take four years. He has done nearly all of the work on the car, and even now makes frequent changes to keep it current. To kick off the rebuild, he boxed the frame, painted it black, and installed a tubular Super Bell axle with a 4-inch drop with



Here's an engine fit for a record album cover. Twin Edelbrock carburetors provide adequate aspiration for the Chevy 350 small-block. Chrome and billet trim balance nicely with the smoothed red firewall.

a POSIES Super Slide spring. A four-bar suspension and front shocks from Pete & Jake's were added along with Mustang drum brakes. Everything but the brakes was given the chrome treatment.

Out back, a chromed Total Cost Involved four-bar suspension combined with Aldan coilover shocks suspend the Ford 8-inch rearend. The rolling stock consists of Wheel Vintiques chrome steelies, 15x5 up front and 15x7 in back, dressed up with chrome Spyder center caps that were popular in the '60s. Firestone bias-ply wide whitewalls add to the period appeal, with 560x15 rollers fore and 820x15 aft.

Powering this nostalgic ride is a '71 Chevy 350 small-block assembled by the Auto Machine Shop. With the engine bored .030 over, Brian maintained the stock valvetrain and opted for a Speed-Pro cam. Two Edelbrock 500 carburetors provide the necessary breathing for this healthy mill and are mounted atop an Edelbrock intake. The air cleaners are copies of the popular Stelling & Hellings units and were obtained from SO-CAL Speed Shop; Brian had to make some alterations to have them butt together. Edelbrock valve covers were sent to New England Chrome Plating and are but a small part of the engine brightwork.

Headers from California Street Rods route unnecessary gases through a 2-inch HPC-coated exhaust system made by Brian, and Stainless Specialties mufflers provide the appropriate burble for the coupe. Ignition consists of an HEI distributor and Taylor wires, while a Walker radiator

Bucket seats from an '84 Subaru were covered with gray velour with a darker gray velour chosen for the doors. The LeCarra steering wheel is mounted on a Chevy van column and VDO instruments provide operating information.

called upon a friend to rebuild the Chevy 350 transmission and had Connecticut Drive Shaft shorten a driveshaft from a '65 Ford.

Brian turned his attention to the body and punched several rows of louvers in the Rootlieb hood and rear pan—so many that it takes too long to count them all. The top was chopped 3 inches and a Juliano's top insert was added. Brian kept body modifications to a minimum, wanting to maintain many of the original trim pieces to keep the period look. While the stock bumper was kept in front, the rear bumper is a '33 commercial piece. Halogen headlights were added, and Brian decided to keep the original taillights. The grille came from a '34 Ford.

Once the body was completely smoothed, Brian painted the coupe with DuPont Porsche Red acrylic lacquer, which really pops when the sun hits it. Inside, he stitched gray velour to cover the '84 Subaru seats, and covered the door panels in matching material. Carpeting also matches the seats, and tinted glass minimizes harsh rays from the sun. The brake and gas pedals were purchased from Big Al's Carponents. A LeCarra steering wheel tops off a Chevy van column, and VDO instruments were mounted in an aluminum insert from Carriage Works set in the original dashboard. Cruising tunes are provided by a Sony stereo system and are pumped through Kenwood speakers.

The license plate "B" is indicative of the car's Model B heritage. Brian and Donna Snell make their home in Colchester, Connecticut, and enjoy driving the coupe as often as possible. We liked it so much, we chose it for a *STREET RODDER Top 100* award at the Syracuse Nationals. SR

FACTS & FIGURES

Brian and Donna Snell
Colchester, Connecticut
1933 Ford coupe

CHASSIS

Frame / Manufacturer	stock / Ford
Modifications	framerails boxed
Rearend / Ratio	Ford 8" / 3.25
Rear suspension	Total Cost Involved four-bar & Aldan coilover shocks
Rear brakes	Ford (drum)
Front suspension	Super Bell axle 4" drop, Pete & Jake's (Peculiar, MO) four-bar & shocks, POSIES (Hummelstown, PA) Super Slide spring
Front brakes	Ford (drum)
Steering box	Ford / Mustang
Front wheel make, size	Wheel Vintiques (Fresno, CA), 15x5
Rear wheel make, size	Wheel Vintiques, 15x7
Front tire make, size	Firestone, 560x15
Rear tire make, size	Firestone, 820x15
Gas tank	Tanks Inc. (Clearwater, MN) 13-gal. steel

ENGINE

Make	'71 Chevrolet
Displacement	350ci
Machining / Assembly	Auto Machine Shop (South Windsor, CT)
Camshaft	Speed-Pro
Radiator	Walker Radiator Works (Memphis, TN)
Alternator	GM
Heads	Chevrolet, iron
Valve covers	Edelbrock (Torrance, CA) / aluminum, chromed
Manifold / Induction	Edelbrock / (2) Edelbrock 500 cfm
Ignition / Wires	HEI / Taylor
Headers	California Street Rods (Huntington Beach, CA)
Exhaust / Mufflers	2" / Stainless Specialties (Cleveland, TN)

TRANSMISSION

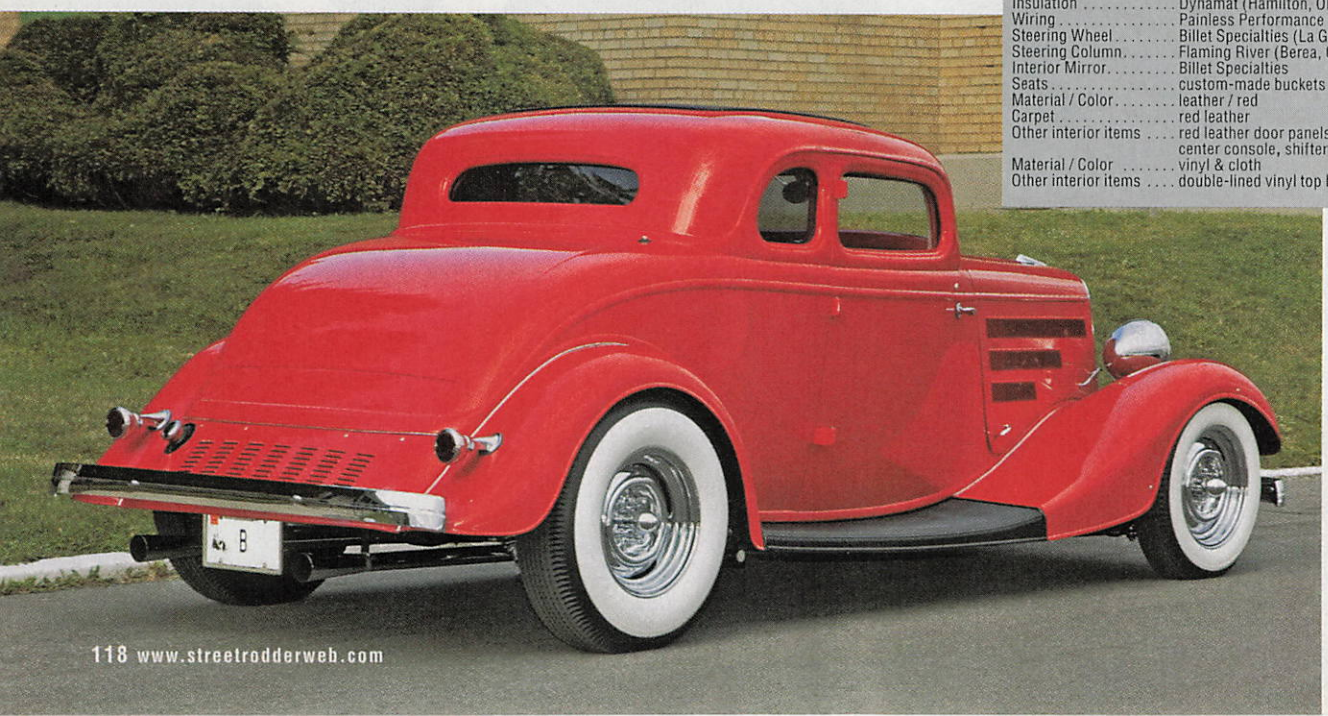
Make	'71 Chevrolet 350 Turbo
Converter	GM
Shifter	GM van
Driveshaft	shortened '65 Ford / Connecticut Drive Shaft (Milford, CT)

BODY

Body style / Material	coupe / steel
Body manufacturer	Ford
Hood	Rootlieb (Turlock, CA), louvered
Grille	'34 Ford
Bodywork	Brian Snell
Paint type / Color	acrylic lacquer / DuPont Porsche Red
Painter	Brian Snell
Headlights / Taillights	halogen / stock
Bumpers	stock front / commercial rear
Other body items	3" chop, Juliano's Hot Rod Parts (Ellington, CT) top insert

INTERIOR

Dashboard	stock
Insert / Gauges	Carriage Works Billet & Accessories (Grandview, MO) / VDO
Stereo / Speakers	Sony / Kenwood
Steering wheel	LeCarra (Oneida, TN)
Steering column	GM van
Seats	'84 Subaru
Upholsterer	Brian Snell
Material / Color	velour / gray
Carpet	wool / gray
Other interior items	tinted glass
Insulation	Dynamat (Hamilton, OH)
Wiring	Painless Performance (Fort Worth, TX)
Steering Wheel	Billet Specialties (La Grange, IL)
Steering Column	Flaming River (Berea, OH) billet
Interior Mirror	Billet Specialties
Seats	custom-made buckets
Material / Color	leather / red
Carpet	red leather
Other interior items	red leather door panels; custom-made center console, shifter ring & boot
Material / Color	vinyl & cloth
Other interior items	double-lined vinyl top by Ricki's



The rear pan was given the louver treatment, all part of the nostalgia trend popular today. The original taillights were retained, and the bumper from a '33 commercial vehicle was added.

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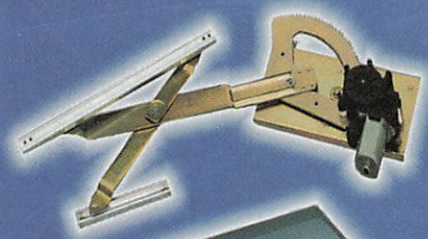

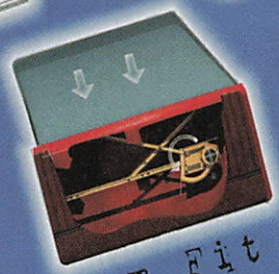

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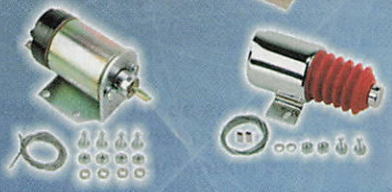
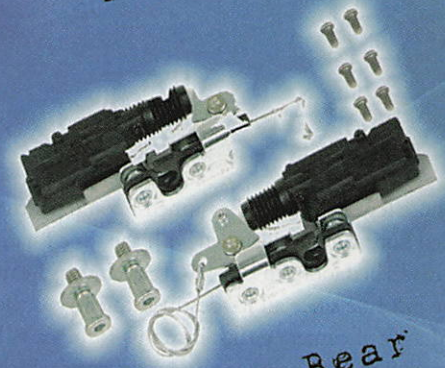
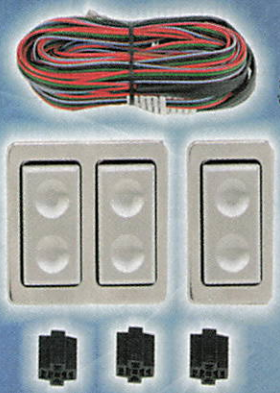




Power Bear Claw Latches



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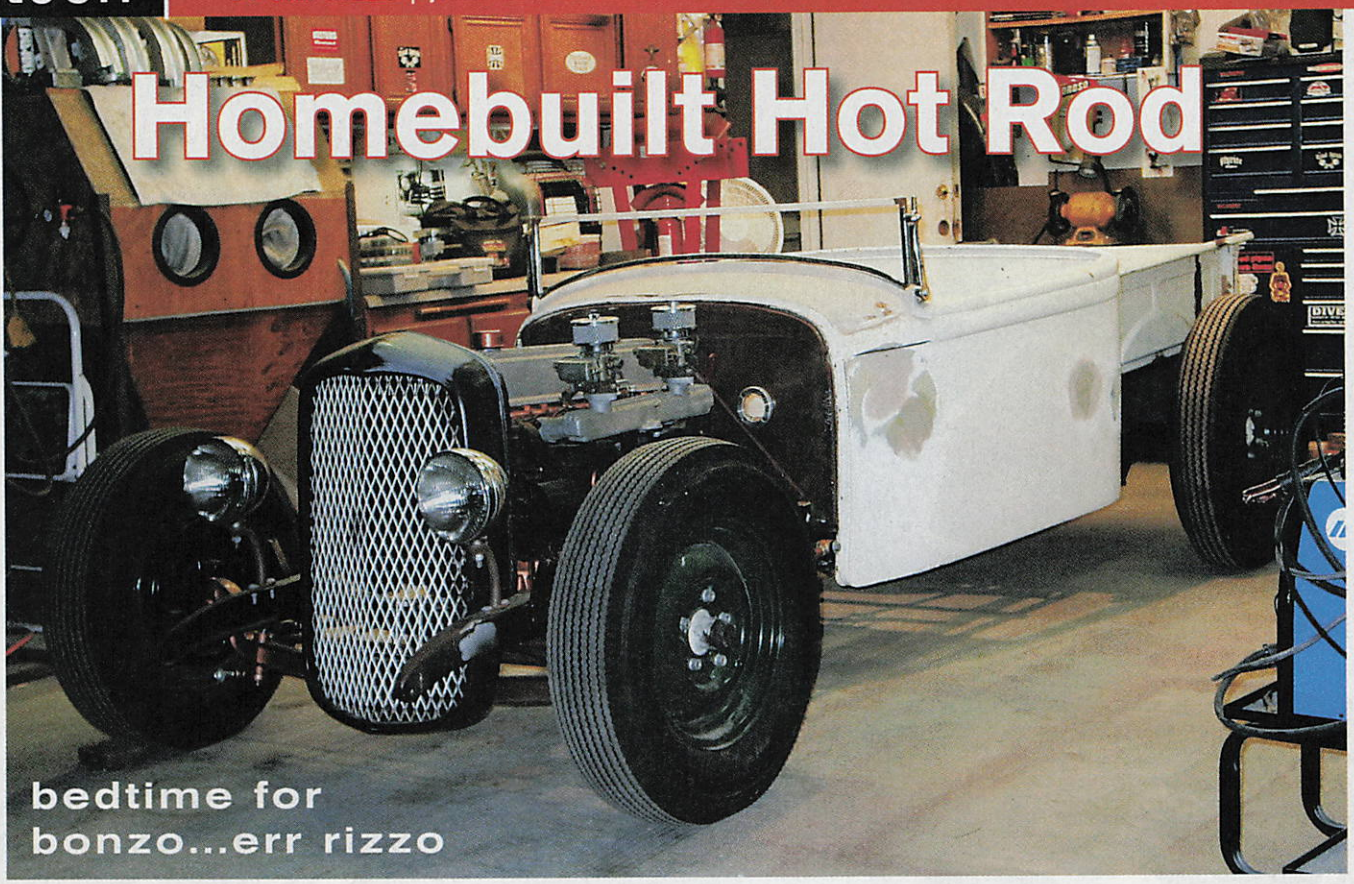
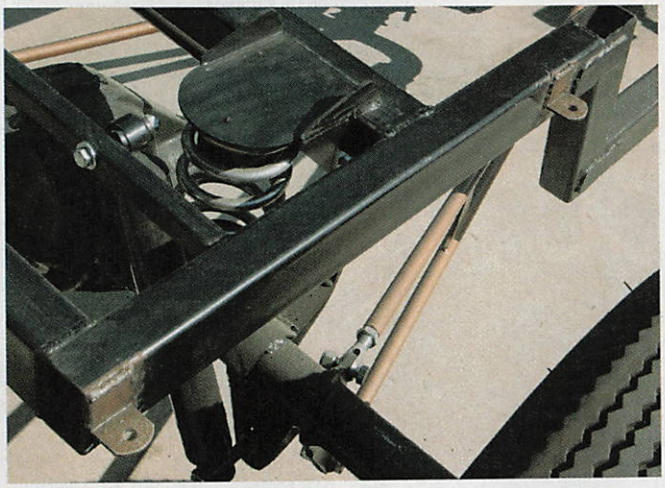
Homebuilt Hot Rod



bedtime for bonzo...err rizzo

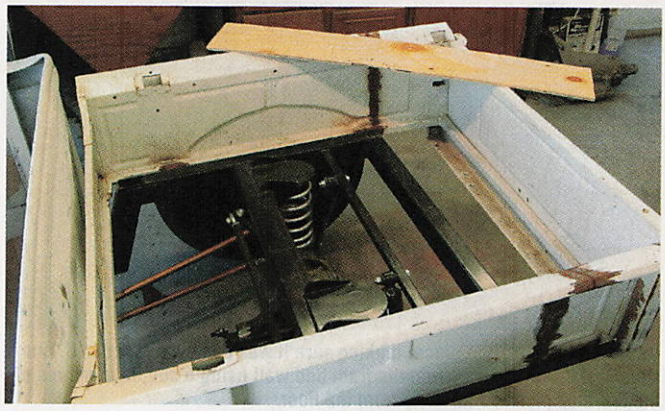
I figured it was about time to get back to sewing together this homebuilt hot rod since I found a couple of spare hours this past weekend. Since all the major fabrication has been completed, all that's left is actually of relatively minor consequence—though each one gets me closer to the road.

Since I did have those few free hours, I assumed I could get the bed mounted and a bed floor cut and installed with the time I had. The Homebuilt Hot Rod's bed looks to be a '27 T, as close as I can figure, which suits me just fine since all it's destined to carry is the fuel tank, battery, and a bit of camera gear. Since this is the case, I knew I didn't have to worry about it being really heavy-duty, which

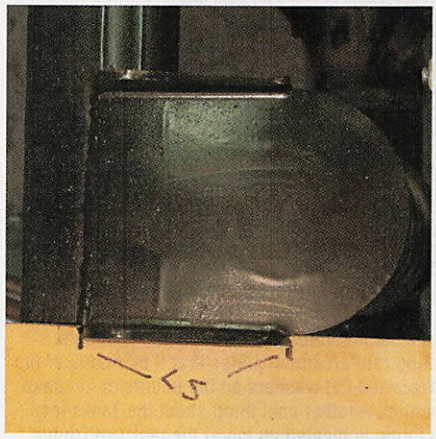


The Z'd portion of the rear framerails worked out to my advantage in this situation. Not only would the raised 'rails allow me to easily fabricate mounting tabs without a lot of unnecessary fabrication, but the 'rails will serve as my floor supports, as well. Upon eyeballing both the chassis and the bed, it was evident that all I'd need was eight small angle brackets—four for the bed and four for the chassis (this image shows the two frame side brackets attached to the sides of the 'rails).

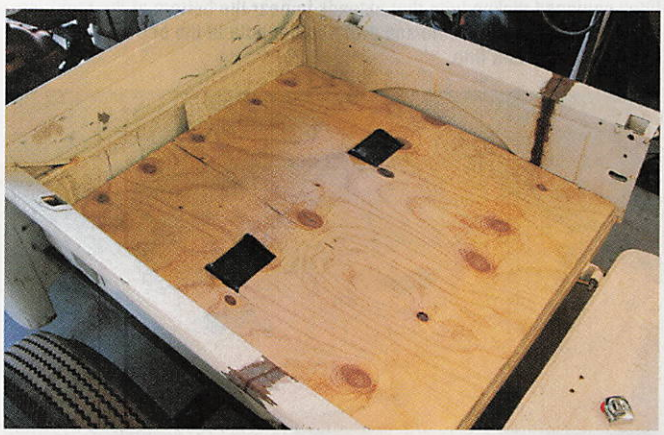
I started by lowering the bed into place over the rear 'rails using a bunch of 2x4 wood blocks I keep on hand for situations such as this. I then searched my scrap metal stash (every home hobbyist should have such a collection) and ran across a small pile of angle brackets that I picked up at a local garage sale (I believe they're actually steel fence or gate components). With the bed blocked in place, leveled and squared to my satisfaction, I marked both the framerails and the lower bedrails where I wanted to locate my angle brackets.



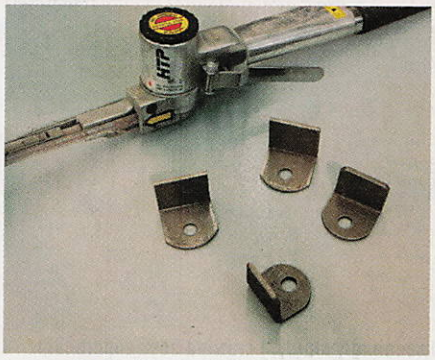
The next step was to weld the tabs to both the lower bedrails and the sides of the framerails. With all eight welded into place, I then placed the bed onto the chassis, aligning the brackets and inserting a quartet of nuts and bolts. Before tightening everything up, I checked to make sure I was correct in my calculations and that the bed mounted square and level.



One thing I did have to contend with was the upper coil spring mounts that protruded above the framerails—I'd have to work around these in order for the floor to sit on the 'rails and not have to fabricate any additional floor supports. To accomplish this, I cut a strip of plywood and marked and notched it at the spring mounts so I could use it as a pattern for marking and cutting the full sheet.

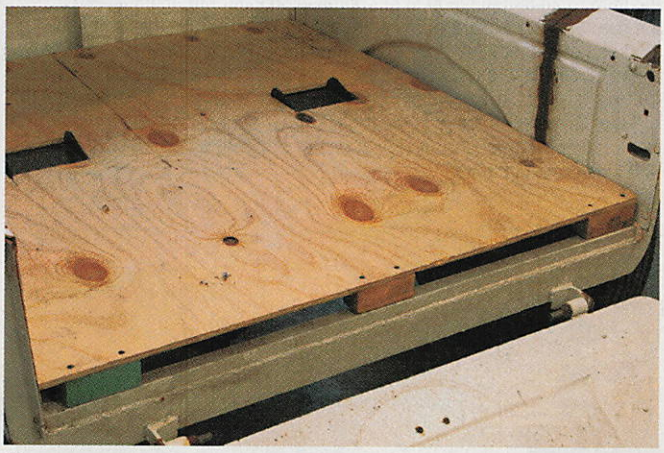


With everything checking out positioning wise, I then began thinking about the bed floor. I had a sheet of 3/8-inch plywood handy and figured it'd be adequate for the job since the vehicle would never be carrying that much of a load.



After transferring the markings to the plywood I'd cut to fit the bed, I lowered it into place, checking to make sure it was as level as possible. Next, I loaded up the floor with a bit of weight (I used four nearby jack stands) so the floor was firmly laying on the framerails and crawled underneath to mark the bedsides to locate the same type of angle brackets I'd used to mount the bed to attach the floor to the bed. I used my HTP portable band sander to clean off the existing paint and made my marks—then it was back to the scrap pile to hopefully find a few more of those aforementioned brackets.

There were five more brackets in the heap, so I lucked out in that respect. I welded the remaining brackets to the bed, lining up their top surface to the marks I'd made on the bed using the bottom surface of the plywood, and welded 'em to the bedsides (you can see one here in the lower left of the photo).



There was a gap at the rear tailgate opening because the bed itself is channeled over the framerails. I again lucked out by finding a few 1 3/4-inch square by 4-inch-long blocks in my woodpile (being a packrat has its advantages) that worked perfectly for supporting the floor at this gap.

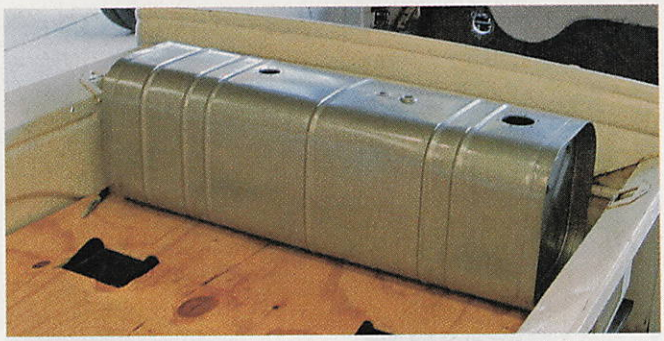
saves me the work of fabricating any extensive floor supports—besides, the rear portion of the framerails will serve that need.

As you'll soon see, I went about this chore in the quickest and easiest fashion, and the whole process took me less than three hours to complete. It may not be the way you might choose to handle the job, but then again, the whole concept behind the build is more to prove that we're all capable of building a hot rod rather than telling you exactly how to do it. So, take a look

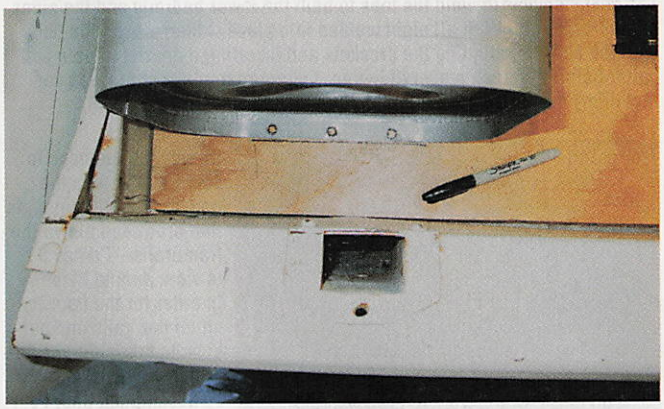
With the floor in place and seemingly sturdy, I crawled back underneath and marked the underside of the floor at the mounting brackets so I could pull out the plywood and drill the mounting holes. Next, it was back to another stash (my hardware stash) where I found an appropriate number of carriage bolts to attach the floor to the bed.

Once the bed floor was bolted into place (and I still had a bit of time before the better half called me in to get ready to take her out to dinner—it's a balancing act I'm sure we've all hopefully mastered), I figured I had enough time to locate my Tanks Inc. fuel tank. I unpacked it for the first time and checked it out, since I got it some months ago—it's impressive for its affordable price, I must say. It's not only well made and good looking, but comes with most all the fittings, filler hardware, and mounting reinforcements needed. I'm very pleased; it should work perfectly for me and look great in the bed, as well.

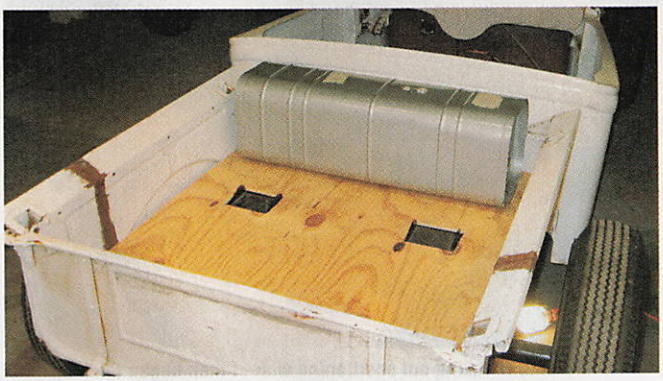
at how I went about this task, keeping in mind all I'm trying to do is motivate you folks to get out there in the garage and whip together one of these babies yourself—the world needs more hot rods on the road! SR



I lowered the tank into place, making sure it was centered in the bed, and spaced it 3/8-inch away from the front bed wall using a couple of scraps of the 3/8-inch plywood left over from the floor.



The tank is manufactured with three predrilled mounting holes located in the bottom tank flanges at either end (making for super easy installation) so all it required was to trace out the holes and drill the plywood floor. The tank comes with mounting reinforcement plates that'll sit on top of the flange, and I'll use some oversized flat washers on the underside to make sure the tank is solidly mounted. Another cool thing about the Tanks Inc. tank is that the fuel-pickup fitting is located on top of the tank (utilizing a filter-equipped pickup tube that extends to near the bottom of the tank), so there was no need to locate and drill another hole in the bed floor under the tank for the fuel line.



And here's the fruit of that afternoon's labor—a new bed floor and a located fuel tank. I figure I'll end up mounting my battery rearward of the fuel tank and between the protruding upper spring mounts. Once that's done, I'm thinking of spraying the inside of the bed with a coating truck bed lining as the finishing touch—of course, that'll be after I tackle the bodywork on the cab and bed.

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Just For Fun

richard graves builds a cool classic coupe

BY JIM RIZZO

Once a hot rodder, always a hot rodder—a true statement if I've ever uttered one, and one perfect example is that of Richard Graves of Richard's Wheel & Chassis in Long Beach, California. Richard has been a tried-and-true hot rod fanatic for well on 51 years so far, with no end in sight. In fact, when he's not busy making other folks' hot rod dreams come true, he's throwing together some awfully smooth rides for himself—take this cool little coupe, for example.

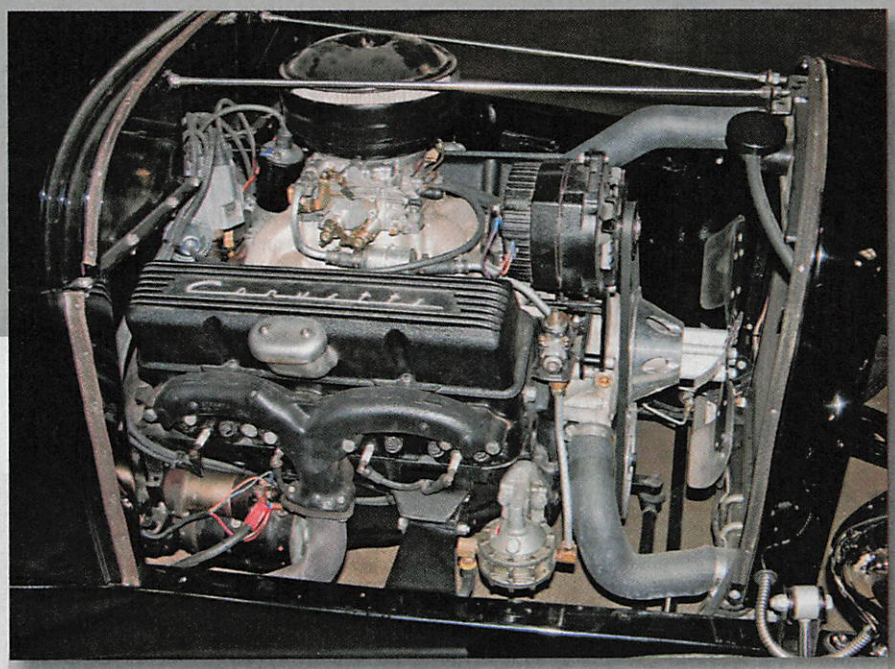
Like any self-respecting hot rod nut, Richard always has an eye open for a potential project. Recently, while perusing the local weekly classifieds rag, he came across an ad for a relatively complete '29 A coupe. The car was in fair condition, so Richard snagged it and brought it back to the shop (a story in itself). Once home, he stripped down the car and sold off everything but the sheetmetal (pretty much recouping the cost of the car), all the while planning the build in his head.

Richard's plan was a no-nonsense ride based on the K.I.S.S. (keep it simple, stupid) principle—nothin' fancy, just a basic, fun little hot rod; as you can see, he hit the nail on the head.

With the coupe's body being massaged back into shape by pal Jeb Scolman, Richard began the task of building a foundation for his soon-to-be pristine body assembly. He started out with a pair of Deuce 'rails, to which he added the appropriate crossmembers to transform it into a perimeter frame assembly. To that he added '36 Ford transverse springs front and rear, and a combination of a 5-inch-dropped tube axle fitted with '40 Ford spindles and drum brakes, a split wishbone, and a pair of Pete & Jake's shocks up front.

Out back, a drum brake 9-Ford rear, radius rods, and Panhard bar round out most of the chassis assembly, while a custom-fabricated pedal assembly, a full complement of steel brake and fuel lines, and a Vega steering box finish it off. Richard then chose a quartet of steel F-100 15-inch wheels and blackwall tires to get it rolling.

When it came to choosing a drivetrain, Richard opted for an oft-overlooked powerplant—a mid-'70s 262 Chevy V-8. These diminutive engines were used for a couple of years in the Chevrolet Monza and are known for offering enough power for a lightweight hot rod along with cool running due to their small bore size. He then backed the 262 to a T5 five-speed,



Richard is partial to Chevy's little 262 V-8, which will pull a lightweight hot rod around town and down the freeway with little effort. Its small displacement makes for a cool-running powerplant that'll behave well in bumper-to-bumper traffic snarls or fairgrounds cruising.

A clean and simple interior perfectly complements the coupe's traditional styling and carries the K.I.S.S. principle all the way through the car's styling.

The one major custom concession the coupe enjoys is the neat hood-side conversion Richard chose to perform. The use of '32 Chevy hood-side doors on the A hood adds a classy touch that looks right at home on the traditionally styled rod.

adding a bit of off-the-line punch to the cruising comfort of that extra gear—besides, real hot rods have three pedals.

With the chassis complete, the next step was the mounting of the newly massaged and freshly painted sheetmetal. Richard chose to restore the body back to its original configuration, passing on any alterations other than the replacing the stock hood-side louvers with a set of '32 Chevy hood-side doors (a neat idea that adds a bit of pizzazz to an otherwise resto-style look). Richard chose to treat the coupe's cockpit to a fresh new interior that's as unobtrusive as the car's exterior.

Richard's six-month project culminated in perhaps one of the nicest A coupes we've seen in a long time, and his less-is-more build style made for a car that's as much fun to admire as it is to drive. Then again, those are traits Richard's creations are well known for in Southern California. We can't wait to see what comes next from his Long Beach digs—and you know we'll be waiting, camera in hand. SR

FACTS & FIGURES

Richard Graves
Long Beach, California
1929 Ford highboy coupe

CHASSIS

Frame / Manufacturer	owner-fabricated using American Stamping '32 'rails
Wheelbase	106"
Modifications	pinched for A-body
Chassis plumbing	steel
Rearend / Ratio	9" Ford / 3.25:1
Rear suspension	'36 Ford leaf, Pete & Jake's (Peculiar, MO) shocks
Rear brakes	11" drum
Front suspension	dropped Magnum tube axle, '40 Ford spindles, '36 Ford leaf, P&J's shocks
Front brakes	'40 Ford drum
Master cylinder	'62 Chevy pickup
Steering box	Vega
Front wheel make, size	'56 Ford F-100, 15x4.5
Rear wheel make, size	'56 Ford F-100, 15x6
Front tire size	155/75-15
Rear tire size	235/75-15
Gas tank	20-gal. steel

ENGINE

Make	Chevrolet
Displacement	262ci
Assembly	Richard's Wheel & Chassis (Long Beach, CA)
Crankshaft	stock Chevrolet
Cooling fan	mechanical
Radiator	Mattson Radiator (Stanton, CA)
Alternator	100-amp
Heads	iron
Valve covers	Corvette
Manifold / Induction	Edelbrock (Torrance, CA) / Edelbrock 500-cfm
Ignition / Wires	GM HEI
Headers	iron manifolds
Exhaust / Mufflers	custom 2" / Flowmaster (Santa Rosa, CA) Hushpower

TRANSMISSION

Make	Chevrolet T5
Clutch disc	Friction Materials (Tampa, FL)
Pressure plate	Friction Materials
Shifter	Chevrolet
Trans mods	Richards Wheel & Chassis
Driveshaft	custom, Richard's Wheel & Chassis

BODY

Body style / Material	coupe / steel
Body manufacturer	Ford
Hood	custom by Jeb Scolman (Long Beach, CA)
Bodywork	Jeb Scolman, Richard's Wheel & Chassis
Paint type / Color	PPG / Black
Painter	Gerardo Hernandez, Richard's Wheel & Chassis
Headlights / Taillights	'29 Ford / '48 Ford
Outside mirror	Vintique
Other body items	glass by Louis, Richard's Wheel & Chassis

INTERIOR

Dashboard	Jeb Scolman
Gauges	Haneline
Wiring	Matt Porter, Richard's Wheel & Chassis
Steering wheel	'55 Jag
Steering column	'55 Jag
Interior mirror	Vintique
Seats	custom frame by Richard's Wheel & Chassis
Upholsterer	Darrell Morgan & Steve Lance (Long Beach, CA)
Material / Color	vinyl / gray
Carpet	gray

This unchopped highboy coupe is a breath of fresh air in a world of heavily chopped and channeled hot rods (not that we have any qualms about chopping and channeling, mind you).

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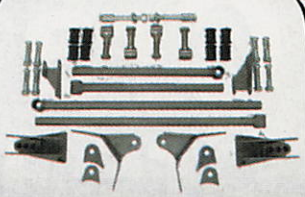

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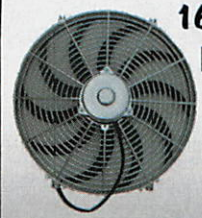

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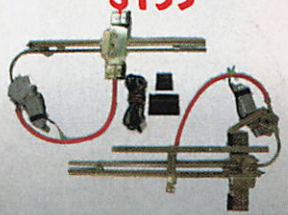

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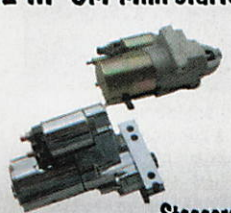

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11" Mustang II Rotors
Slotted Cross - Drilled
Zinc Coated Rotors

$110 Pr.
Ford or Chevy Bolt Pattern

BY JIM RIZZO | jim.rizzo2@sourceinterlink.com

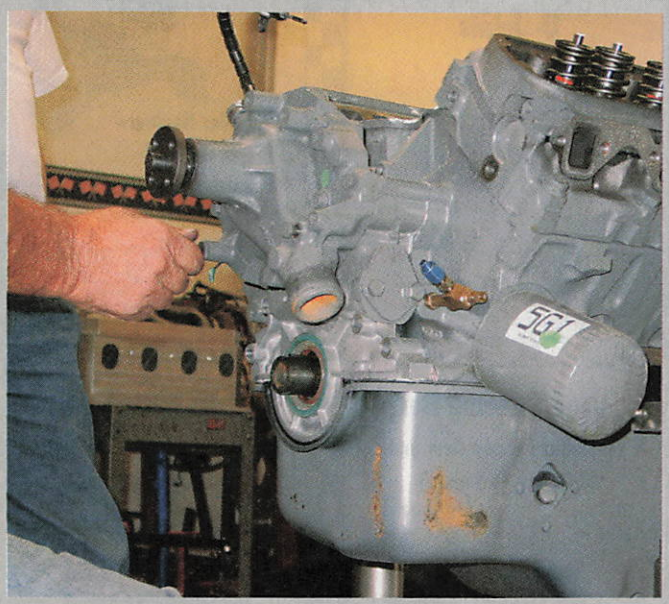
from basic to bitchin'

Crate Creations: Part IV

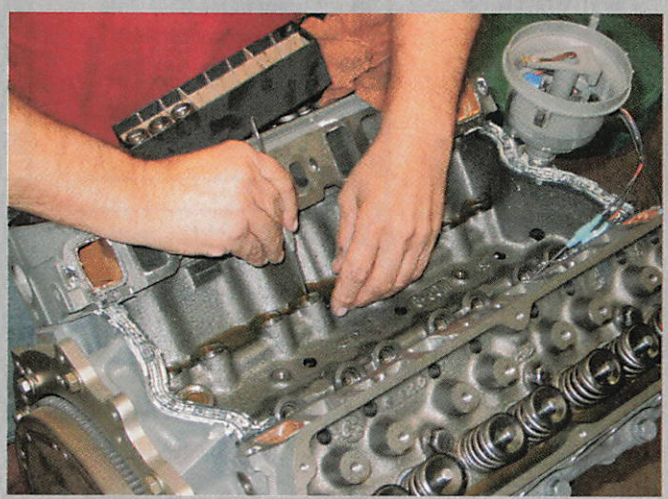
Our small-block Ford is a great choice for a street rod powerplant right out of the crate (in fact, an identical engine was my choice for my next project), but as we car guys realize, we can't leave well enough alone. Luckily, though, our upgrades are being handled by a pair of the best performance engine builders we know—Bob and George Vrbancic. Plus, they were smart enough not to let me within 5 feet of it while it was apart.

Our quest to squeeze some extra horsepower and torque improvements out of our pair of V-8 mule motors without breaking the bank continues. This month, we're back at the Vrbancic Brothers Racing digs over in Ontario, California, with George and Bob Vrbancic to direct our attention to our small-block Ford. As you may recall, we pulled our baselines right out of the box and then proceeded to start some easy and affordable tweaks—the first of which was the installation of a set of COMP Cam's Pro Magnum roller rockers that garnered a pretty good bump for the SBF. We next outfitted the Ford with a set of performance Lunati valve springs, lifters, and camshaft to see what we'd gain horsepower and torque wise.

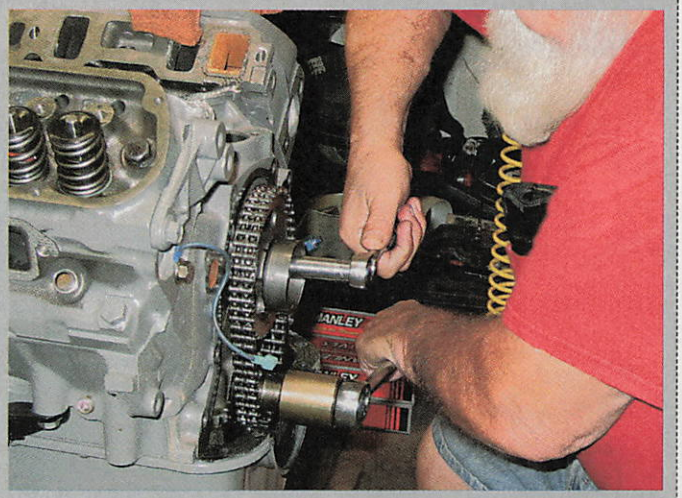
As you'll see, a few affordable and relatively easy modifications have turned a more than respectable street rod engine into a real performer for much less than a king's ransom. So follow along and check out our latest quest for more power and torque. SR

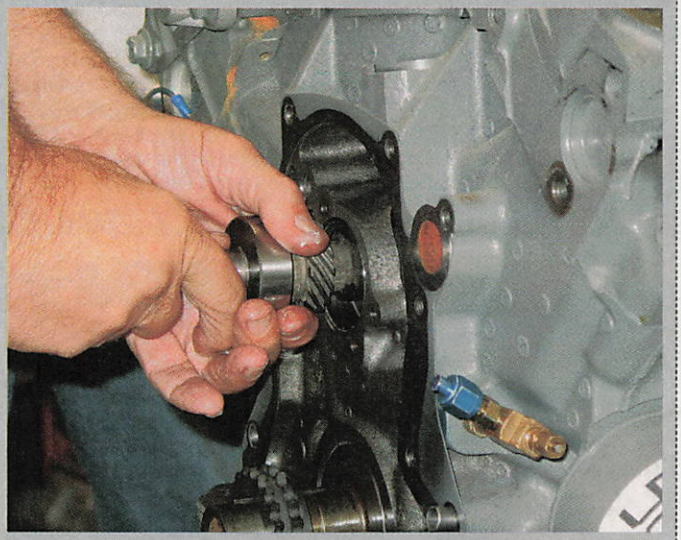


The obvious start for this phase is to tear down the engine in preparation for our next set of upgrades, and George makes quick work of it.

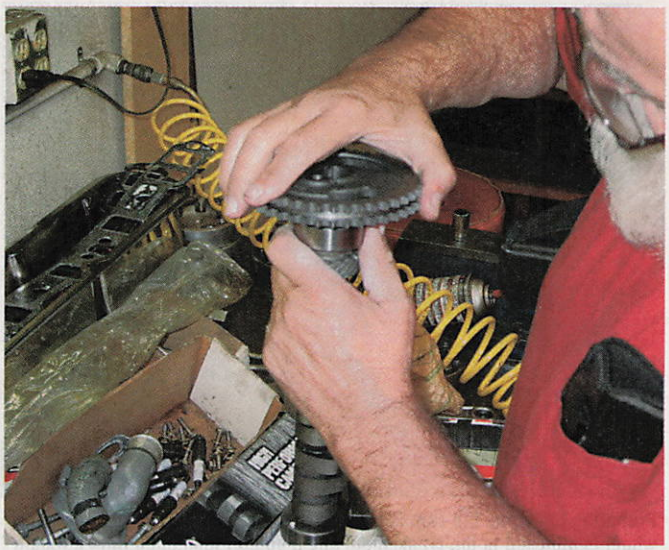


It's important to use matching parts with any internal engine upgrade. Price-conscious catalog shopping may garner you the components you need, but there's no guarantee they will work in harmony. It's always a smart move to take advantage of the professional knowledge provided by the manufacturer's tech line staff when making your component choices. Here, George starts getting down to business by removing the stock lifters.

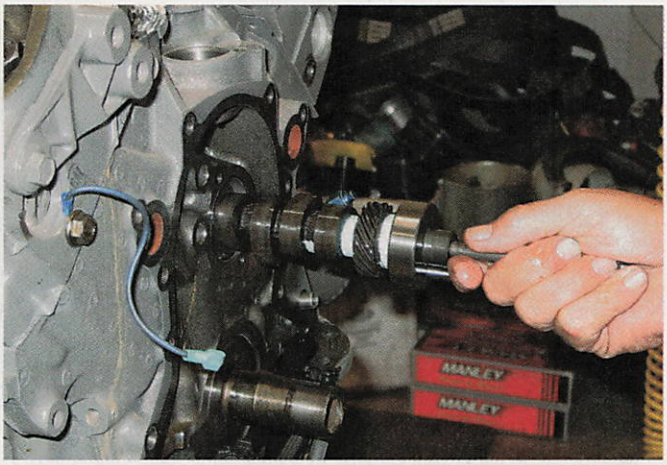




The timing chain and gears are removed so we can yank the stock camshaft. Be cautious when removing the cam so you don't damage the cam bearings.

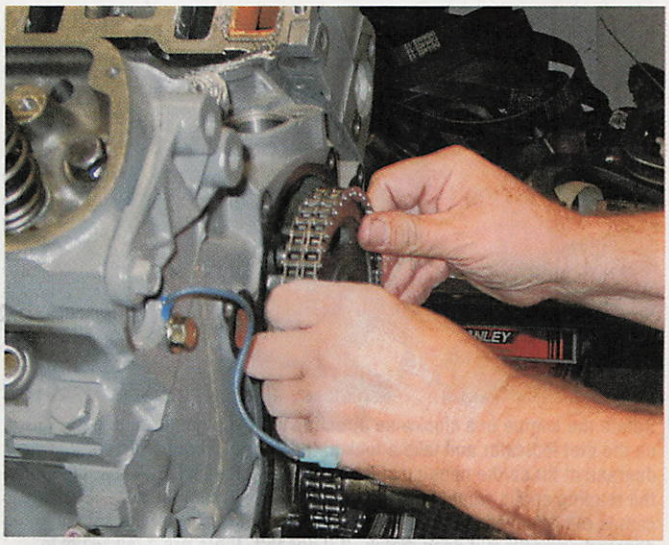


We also opted to upgrade the factory timing gear/chain setup with a matching Lunati set. Here, George tests the fit of the new cam gear.

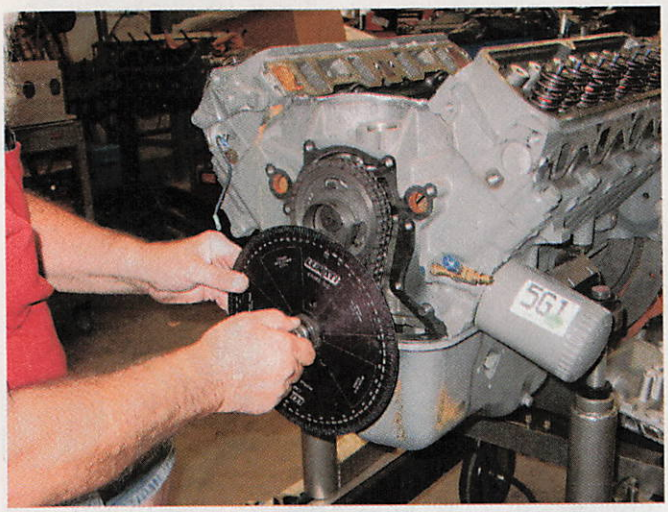


George carefully slides the new Voodoo cam into place after lubing it up.

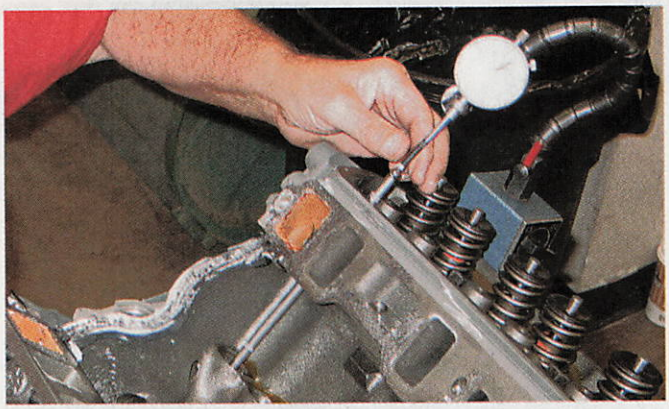
A Lunati Voodoo camshaft (PN 61001)—with a .483 intake lift, a .499 exhaust lift, and 256/262 duration—was chosen as our replacement. It's a good, streetable choice for a responsive street rod engine of this sort.



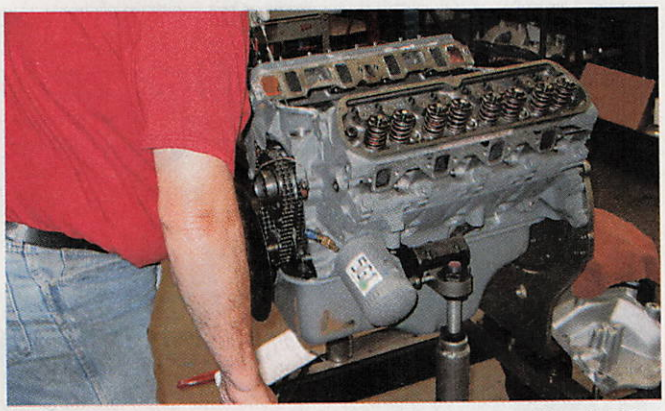
Next, the new timing set is installed, taking care to align the timing marks as needed.



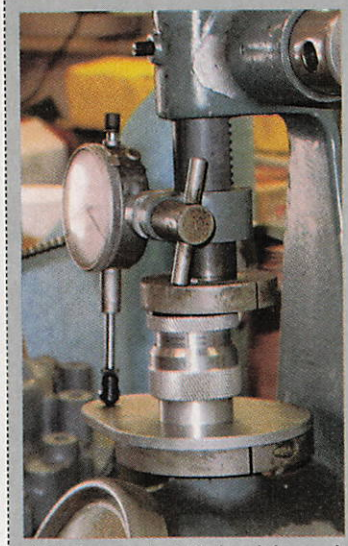
Preparing to degree the cam is the next step in the process. The degree wheel is attached to the crank snout and a pointer fashioned from a length of mechanics wire. The crank is then rotated to top dead center (TDC) and the pointer aligned with the TDC mark on the wheel.



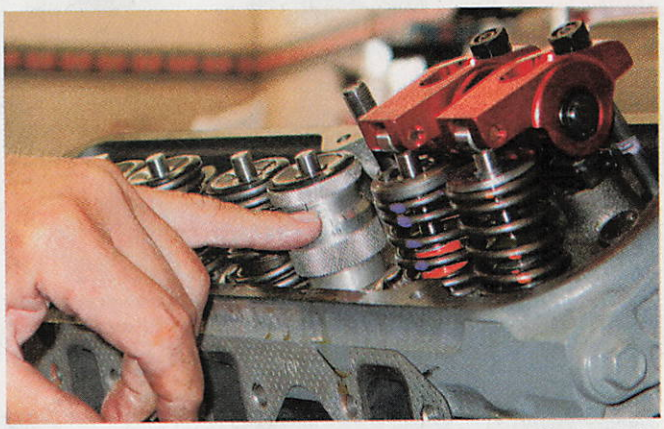
Next, a lifter is placed in the number one intake bore and a dial indicator positioned securely above the lifter. The engine needs to be rotated clockwise until the lifter is on the "heel" or base circle of the cam lobe, and then zero the indicator.



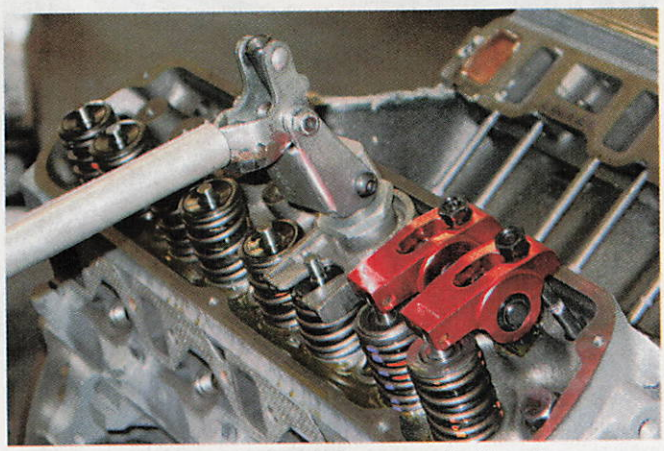
Rotate the engine in a clockwise direction until you get a reading of .050 on the dial indicator and take a look at the degree wheel. This point is .050 degrees of lift on the opening side of the intake lobe BTDC. Next, compare the reading on the wheel with the "IN OPENS" spec on the cam card; the cam is either advanced or retarded if it doesn't match, but the cam is degreed correctly if it does match. If it doesn't, there are a few ways to adjust the valve timing. You can use degree bushings on the cam sprocket to offset the cam-locating pin, or you can move the gear to index the cam if your timing gear set has additional keyways.



With the cam installed and degreed, the next step is to install the new Lunati hydraulic lifters (PN 71900). With the lifters lubed and in place, George then sets his sights on the new performance valve springs, retainers, and locks (Lunati PNs 3084, 75702LUN, and 77034, respectively). The cam card specifies a 1.750 installed spring height at 115 lbs, so George sets the spring gauge to the appropriate setting and checks the spring pressure before the installation. COMP Cams pedestal-mount Ford rockers (PN 1052-16) are also used.



George tries his best to explain the process to me in terms a simple mind such as mine can understand—I think I get it. ...



The pushrod and roller rocker installations come after the springs are installed and their height is checked, set, and shimmed as needed.

the original and still the best...

ECI HOT ROD Disc Brake Systems

You only have to know three things...

- *ECI pioneered the first street rod disc brake kits over 20 years ago! The first Mustang II Big Brake Kit, the first Street Rod Power Brake System and the first complete line of brake kits for early Chevrolets.*
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ECI Street Rod Booster

This booster has special valving and a diaphragm calibrated to give the right sensitivity for street rods. Small 7" dia. fits under the floor. Includes new Corvette dual disc/drum master cylinder. ***$275.00***

Pedal Assembly w/Booster and Master Cylinder

Bolts in the original location. Includes booster, dual master cylinder, bracket and pedal with pad and hardware.

'28-32 Ford (weld on) ***$345.00*** '33-48 Ford ***$395.00***
'47-59 Chevy Truck ***$395.00***

Underdash Power ***$395.00*** (7" booster)

Underdash Manual w/clutch ***$395.00***

NEW Hanging Pedal Units

NEW!

ECI's universal ***Firewall Mounting System*** offsets the master cyl./booster for increased engine clearance and correct pedal placement. Adjustable pedal ratio. Brake light switch and dash supports included. Available manual m/c, 7" booster or 9" booster

Underdash Mounting System is also available with manual m/c, 7" booster or 9" booster, remote fill system and hydraulic clutch pedal. Some fabrication required.

Underhood Power ***$395.00*** (7" booster)

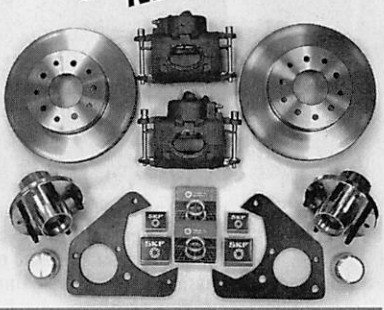
5" & 5-1/2" Disc Brake Conversions for Mustang II spindles

This new kit uses the original 5" Chevy or 5-1/2" Ford bolt circle wheels with 11-5/8" diameter rotors, and BIG piston GM calipers. Increase braking 70% over the stock Mustang brakes. includes aluminum hubs and dust covers, new bearings, races and seals, caliper mounting brackets, new rotors, rebuilt calipers w/ pads and mounting bolts*.

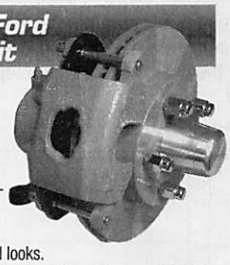
Complete kits 5" Chevy $550.00 5-1/2" Ford $525.00

**Stock MII upper caliper cradle mounting bolts are required.*

NEW!



NEW '37-48 Ford bolt on disc kit



New aluminum hubs, 11 in. diameter rotors and BIG piston GM calipers for maximum braking. Outer bracket attachment allows for use on stock or aftermarket spindles, and stock or bolt-on steering arms. Get maximum braking with good looks.

4-1/2" or 4-3/4" bolt circle. ***Complete kits are $525.00***

Chrysler Bolt-On Disc Brake Kits

'37-41 & '46-54 Dodge and Plymouth Cars
'65-72 "A" Body, Dodge and Plymouth Cars
'62-69 "B" Body Dodge and Plymouth Cars

This is a true bolt-on kit that requires no machine work to the original spindle. Kit uses ECI billet hubs, 11" rotors and GM full size car calipers.

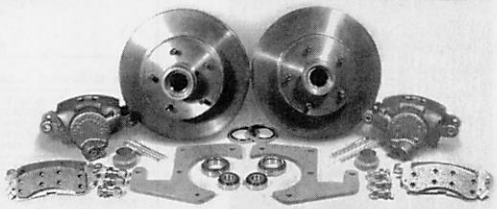
SUPER KIT $575.00

GM Muscle Car/Sub Frame Disc kits

Special ECI billet hubs and brackets mount 11 rotors" and big GM calipers to stock drum brake spindles.

68-74 Nova, 67-69 Camaro, 64-72 Midsize GM
$525.00

NarrowTrak
Narrows track 1- 2" for GM/street rod subframes
$595.00



5½" Bolt Circle Disc Brake kits

'37-48 Ford, 37-64 Ford 1/2 ton pickup

Uses larger late model Ford F100/F150 truck rotors with GM full size car calipers.

BASIC KIT $125.00
SUPER KIT $369.95

Mustang II "BIG" Disc Brake kits

Many kits use the smaller T-Bird or metric GM caliper. ECI uses full size GM calipers and 11" GM rotors on billet hubs. ***You get a 65% increase in braking over stock and no wheel offset!***

BASIC KIT (with hubs) $379.95
SUPER KIT $525.00

Ford & GM Disc Brake kits

These kits use full size GM calipers and GM rotors. Ford rotors are available for Ford cars and trucks. No machine work is required. Basic kits include brackets, hardware and bearing adapters where needed. Super kits also include calipers, pads, rotors, bearings, seals.

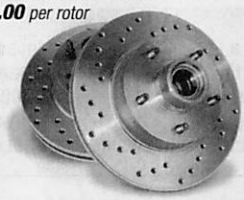
	GM Discs		FORD Discs	
	Basic	Super	Basic	Super
'37-48 Ford,	$125.00	$349.95	$125.00	$379.95
'49-53 Ford, '52-53 Merc	$140.00	$350.00	$195.00	$375.00
'48-56-F100	$125.00	$349.95	$125.00	$379.95
'74-78 Mustang	$120.00	$369.95	$150.00	$369.95
'28-54 Chevy, '28-59 Chevy P.U.	$150.00	$379.95		
'55-68 Chevy	$140.00	$389.95		
'68-74 GM Muscle Cars		$525.00		

Rear Disc Brake kits

for* 8, 8.8, 9" Ford, 10-12 bolt GM 55-64 Chevy Rears** Uses GM rear calipers with factory parking brake. Kits bolt-on without removing bearings. ***$525.00

Drilled Rotors

are now available with all ECI disc brake kits.
add $40.00 *per rotor*



CATALOG $4.00

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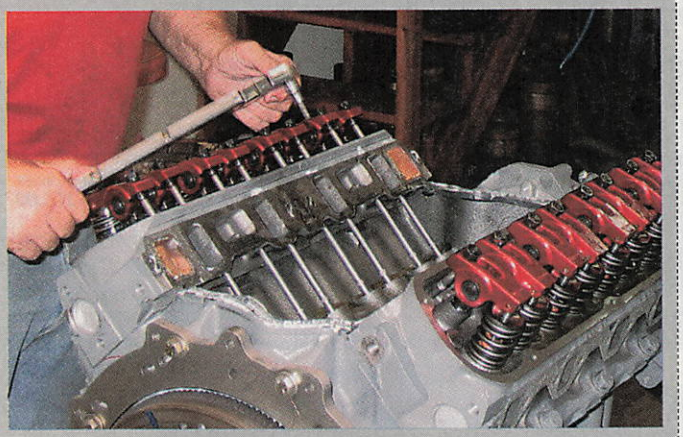
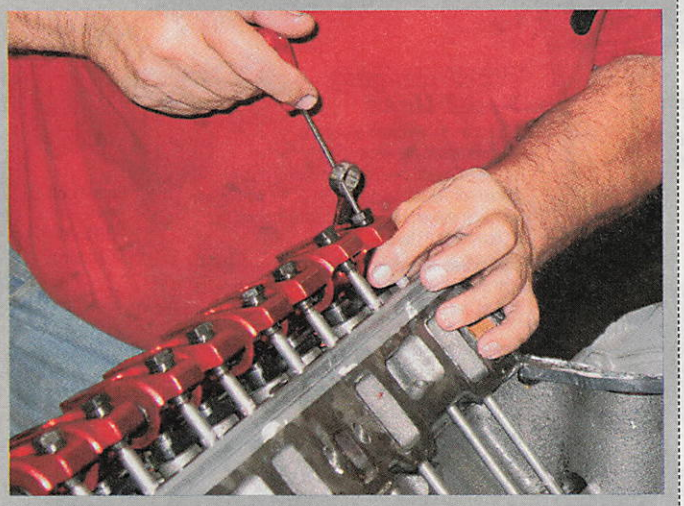
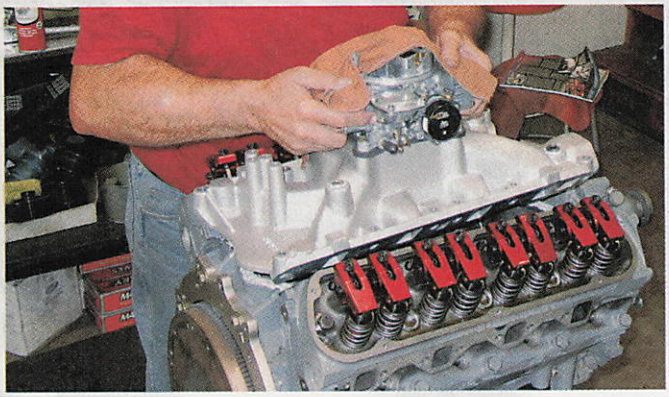
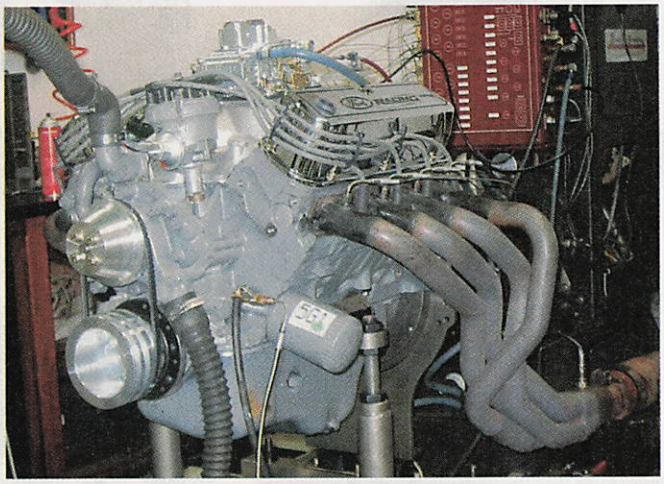




The roller rockers are installed and adjusted according to spec.





With the internal mods completed, George makes quick work of reinstalling the engine's external components and sets up the newly equipped engine for another round on the dyno to see the horsepower and torque improvements we've gained.

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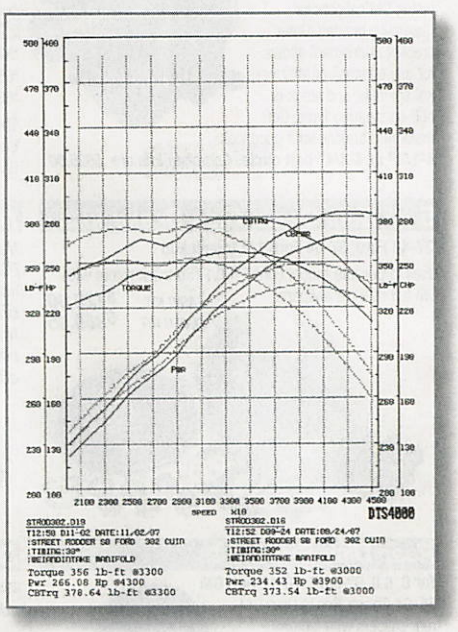
Date 11-02-2007 Time 12:57:36

T12:57 D11-02 DATE:11/02/07 :STREET RODDER SB FORD 302 CUIN
:TIMING:30° :WEIANDINTAKE MANIFOLD
:HOLLEY CARB 600 CFM VAC SEC :JETS: PRI: SEC: . P/V
:FUEL PUMP GAS:80.725 :CHANGE TO COMP ROLLER ROCKERS
:CHANGE TO LUNATI CAM/LIFTERS

FileName : STROD302.D17
Mode : A-Sweep

speed rpm	CBTrq lb-ft	CBPwr CHp	BSFC lb/Hphr	FUEL lb./hr.	Fa+Fb GPH	OilPr psi	OIL° °F	WATER° °F	CAT °F
2000	345.8	131.7	.847	106	17.93	61.1	180	134	81
2100	350.6	140.2	.856	105.9	17.9	61.4	180	134	81
2200	353.6	148.1	.804	105.8	17.88	61.4	180	134	81
2300	357.9	156.7	.76	105.6	17.86	61.6	180	134	81
2400	361.7	165.3	.721	106	17.93	61.9	180	134	81
2500	365.2	173.8	.689	107	18.09	62.2	180	134	81
2600	367.5	181.9	.672	109.7	18.55	62.4	180	134	81
2700	366.9	188.6	.654	111.7	18.88	62.5	180	134	81
2800	365.9	195.1	.638	113	19.1	62.7	180	134	81
2900	369.3	203.9	.621	113.8	19.24	63	180	134	81
3000	374.3	213.8	.604	115.6	19.54	63.4	180	134	81
3100	378.1	223.2	.581	116.7	19.73	63.7	180	134	81
3200	379.9	231.4	.566	118.6	20.05	64	180	134	81
3300	379.6	238.5	.558	121.4	20.52	64.3	180	134	81
3400	379.3	245.6	.553	124	20.96	64.6	180	134	81
3500	377.9	251.9	.554	127.7	21.59	65	180	134	81
3600	376.5	258.1	.554	131.1	22.17	65.2	180	134	81
3700	374.6	263.9	.552	133.7	22.61	65.1	180	134	81
3800	371.9	269.1	.548	135.7	22.95	65.1	180	134	81
3900	368	273.3	.547	138.2	23.37	65.1	180	135	81
4000	363.9	277.1	.546	140	23.67	65.3	180	136	81
4100	358.2	279.7	.543	141.2	23.88	65.4	181	136	81
4200	351.2	280.9	.542	142.2	24.05	65.7	181	136	81
4300	343.8	281.5	.544	143.5	24.26	65.7	181	136	81
4400	336.1	281.6	.551	145.7	24.63	65.7	181	136	81
4500	328.3	281.3	.555	146.7	24.8	65.9	181	136	81
[Average data]									
3250	363.3	224.5	.622	123.3	20.85	63.8	180.2	134.5	81

[Inertia factor] 1.13 [Time] 6.3 Secs



After setting up and doing a couple of new pulls, we sat back and took a look at the gains produced by both George's efforts and the new components he installed. I was pleasantly surprised at the gains achieved; it looks as though the cam, springs, and rockers garnered quite a nice increase from the pre-modification results of 358.1 lb-ft @ 3,200 rpm to a post-modification result of 379.9 lb-ft @ 3,200 rpm, and 228.7 hp @ 4,400 rpm and 281.6 hp @ 4,400 rpm, respectively. An increase of nearly 60 hp and 20 lb-ft of torque—pretty impressive for minimal outlay and a few hours of labor! I'm impressed, and can't wait to see what the future holds. So stay tuned, next time we'll check out how the same set of mods affects our SBC mule motor in the near future.

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What you see is what you pay!

Springs & Shocks

Light Springs	$59.95 pr.
MediumSprings	$59.95 pr.
Heavy Springs	$59.95 pr.
Spring Pads	$14.95 pr.

MADE IN THE USA

Gas Shocks	$39.95 pr.
Shock bolt kit	$5.00

Front Crossmember Kits

from **$369.95**

•Chassis Engineering Inc. • Bolt-In, Adjustable Ride Height	from $589.95
Fatman	from $379.95
Heidt's	from $369.95
Total Cost Involved	from $369.95

BIG Disc Brakes

11"

TOTAL COST INVOLVED ENGINEERING INC.

Cast One Piece Brackets 4 1/2" or 4 3/4" Bolt Circle

Complete Kit **$299.95**

Complete Kit	$299.95 pr.
Bracket Kit	$99.95 pr.
Braided Hose Kit	$59.95 pr.

Mustang II

Must. II Coil-Over

Chrome CARRERA

Fully Adjustable Ride Height

$399.95 pr.

Works with O.E.M. or Tubular Control Arms

For the Ultimate Ride

Spring Pads	$14.95 pr.
Spanner Wrench	$19.95

Front End Hub to Hub Kits

Compare- THE MOST COMPLETE KIT AVAILABLE!

Hub to Hub Kits include:

11 inch brakes and Gas Shocks.

Shown with: Tubular Arms- Add $200.00 Dropped Spindles- Add $150.00

Complete Hub to Hub from **$1350.00**

Spindles

New Original Style	$249.95 pr.
Rebuilt Original	$199.95 pr.
New 2" Dropped -Total Cost.	$299.95 pr.
New 2" Dropped -Heidts	$319.95 pr.
Nut & Washer Kit	$14.95
Original Caliper Brackets	$39.95 pr.
Caliper Bracket bolt Kit	$9.95

from **$199.95** Pair

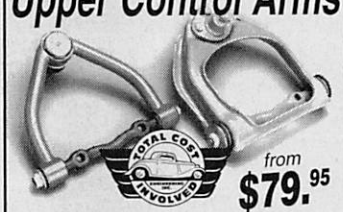
New Rotors

9" and 11"

4 1/2"or 4 3/4" Bolt Circle **$89.95 pr.**

Bearing, Seal & Dust Cap Kit	$19.95
Bearing, Seal & Dust Cap Kit for GM	
11" rotor with 4 3/4 Bolt Circle	$39.95

Upper Control Arms



TOTAL COST INVOLVED ENGINEERING INC.

from **$79.95**

O.E.M style	$79.95 ea.
Tubular plain	$219.95 pr.
Tubular powder coated	$299.95 pr.
Tubular stainless	$369.95 pr.
Cross Shaft	$29.95 ea.
Upper Control Arm Bolt Kit	$19.95

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from **$69.95**

New O.E.M Style	$69.95 ea.
•Tubular Plain	$299.95 pr.
•Tubular powder coated	$389.95 pr.
•Tubular Stainless	$399.95 pr.
Lower Arm Bolt Kit	$5.00

•No Strut Rods Needed •Stock Springs or Coil-Overs •Stamped Spring Pocket

Rebuild Kits

MADE IN THE USA

Ball Joints, Control Arm & Strut Rod Bushings plus Hardware **$139.95**

•Parts available individually.

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from **$184.95**

FLAMING RIVER

New Manual R&P	$184.95
Rebuilt Power -new style	$199.95
Rebuilt Power -old style	$299.95
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Tie Rod Ends -chrome	$69.95 pr.
Rack Bushings	$14.95 pr.
New Bellows	$34.95 pr.
Rack Bolt Kit	$9.95

Strut Rods

from **$59.95** pair

New Original Style	$59.95 pr.
Strut Rod Bushing Kit	$29.95
Frame Bracket Kit	$24.95
Tubular Kit Plain	$109.95 pr.
Tubular Kit Stainless	$179.95 pr.

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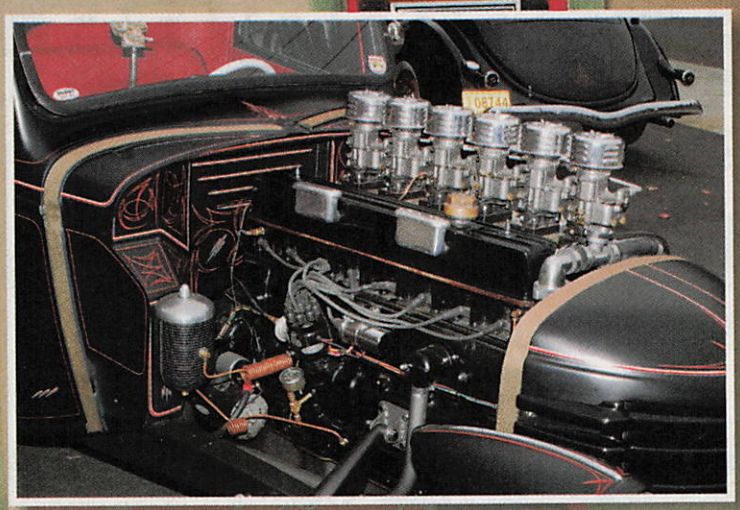


The original rocker cover has been modified with added ribs made from 5/16 round rod, a pair of breathers, and an oil fill cap that was once a 1910 Buick hubcap. Inside the stock distributor is a PerTronix electronic conversion. Check out the detail in the beehive oil filter plumbing and the sanitary engine mount.

BY RON CERIDONO
PHOTOGRAPHY BY DALE MOREAU

Abbreviated 1-Ton

While the unusual engine tends to grab everyone's attention, there are a host of other smaller details worth noting. Check out the sight glass fuel gauge on the custom gas tank, the Speedway friction shocks, holes drilled in the Panhard bracket, and the subtle pinstriping.

the long and short of building a street rod

Some kids become interested in cars at an early age, but Steve Kaiser started really young. Before he could head off to kindergarten, his mom would frisk him to find all the toy cars and trucks stuffed in his pockets. It's now more than just a few years later and not much has changed—Steve's still playing with cars.

A veteran of a number of rods, customs, and truck buildups, the concept for Steve's latest project rolled around in his head for 20-plus years, but, as he said, "I'm too anal to build a rat rod." Of course, when you have friends like Russ Meeks and Lonnie Gilbertson helping out, both of whom have crafted *America's Most Beautiful Roadster* award recipients, the end result has to be a winner.

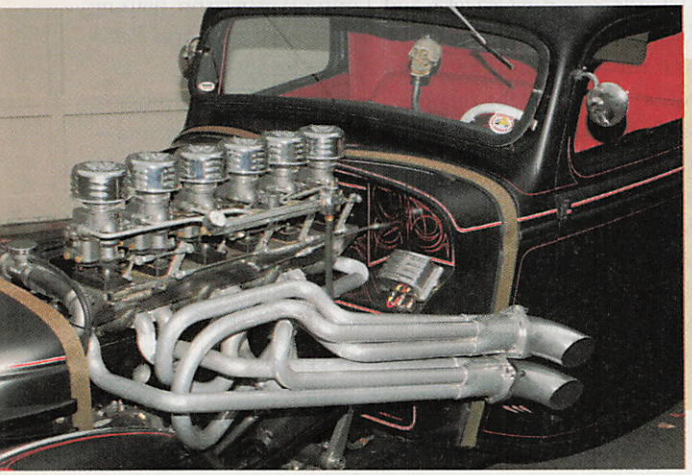
Steve's vision called for a chopped and channeled pickup-based, lakes-style rod with a straight-six when construction began, and—thanks to a couple of buddies—that's how it started. One had a virtually perfect '36 Ford 1-ton truck cab, another had a cherry '40 Ford frame; then Steve got to talking to another legend in our hobby, Dee Wescott of fiberglass body fame, and things went slightly askew. Dee knew the whereabouts of a Buick straight-eight engine. It seems the big inliner had been delivered to a machine shop with the intent of building a serious performer, but the engine's owner abandoned it after it was equipped with special pistons, a custom ground cam, stainless valves, had head work done, and was balanced. After collecting dust at the machine shop for a few years, it was up for grabs at half of what the parts cost; Steve decided eight cylinders were better than six at that point.

Using his experience as a machinist and with help from Gilbertson's Machine Works, Steve mated the Buick's bellhousing to a '96 Ford T5 transmission. The combination also includes the stock Buick flywheel and a 10 1/2-inch Ford diaphragm pressure plate and disc. Driveline Service supplied the 18-inch 'shaft.

To accommodate the Buick's generous dimensions, Steve stretched the chassis 12 inches in front of the firewall and still needed a 4-inch recess for the engine to fit. In the rear, the 'rails were stepped 24 inches and bobbed 5 inches. Up front, a 6-inch-drop MAS tube axle is located by hairpins, spindles are '49-54–style Chevy with

Under the Model A spring is a Ford 9-inch with Mercury drum brakes. Steve fabricated the housing for the unique single-stop/taillight. Turn signals are license plate lights with colored bulbs.

Best described as cozy, the cab's stock dash has custom adapter rings to allow the use of Stewart Warner Wing instruments. The steering column was owner-built and Moon supplied the steering wheel.



Four of the six Holley 94 carburetors have had their power valves blocked, so only two actually feed the 322ci '48 Buick Roadmaster engine (Eelco linkage makes them work). Steve built the intake manifold and then used yards of tubing making the headers; custom-made mufflers are used on occasion.

drum brakes, and steering is provided by a '64 Chevy box.

Turning his attention to the cab, Steve filled the cowl vent, chopped the top 4 inches, and channeled the body the depth of the frame. Continuing the truck theme, Steve sectioned a '47 Diamond T grille shell 5 inches and added a valence that wraps over the axle before Russ Meeks applied his considerable talents to massaging the grille's bars. Once the sheetmetal work was finished, it was all covered with either flat John Deere Blitz Black or PPG gloss black PPG, then Mitch Kim added the pinstriping.

Inside is an owner-built seat. Jim Sanders of Jim's Upholstery stitched together the red simulated leather and laid the Corvette carpeting; Bob Mulner and Ray Ross handled the wiring, including the lead eyes in the skull shift knob that serve as turn-signal indicators. Creature comforts are at a minimum, as ventilation comes by a stock swing-out windshield and a power-operated rear window, and there's no sound system because, as Steve said, "You wouldn't be able to hear it anyway."

Steve's unique truck is the long and short of street rodding, and we mean that in a variety of ways. While it has been shortened on one end, it's certainly long on engine, carburetion, and creativity, and you can bet there's never a shortage of rodders crowded around to get a look at it wherever it goes. SR

FACTS & FIGURES

Steve Kaiser

Milwaukie, Oregon

1936 Ford 1-ton truck

CHASSIS

Frame / Manufacturer	'36 Ford / FoMoCo
Wheelbase	118"
Modifications	front stretched 12", rear shortened 5" & kicked up 24"
Chassis plumbing	steel line, chrome fittings
Rearend / Ratio	Ford 9" HD / 3:50
Rear suspension	36" hairpins / Pete & Jake's (Peculiar, MO) Panhard bar, Speedway Motors (Lincoln, NE) friction shocks
Rear brakes	'69 Mercury drum
Front suspension	6" dropped axle, MAS Racing Products (St. Paul, MN)
Front brakes	'49-54 Chevy
Master cylinder	'55 Chevy
Steering box	'64 Chevy pickup
Front wheel make, size	Wheel Vintiques (Fresno, CA) Model 71, 17 x 4 1/2
Rear wheel make, size	Wheel Vintiques Model 71, 17 x 4 1/2
Front tire make, size	Coker (Chattanooga, TN), 5.50x17
Rear tire make, size	Coker, 7.50x17
Gas tank	custom made by owner

ENGINE

Make	Buick
Displacement	322ci
Machining / Assembly	Sandy Machine Shop (Sandy, OR)
Crankshaft	stock, balanced
Pistons	Probe Industries (Torrance, CA)
Camshaft	reground stock
Water pump	Buick
Cooling fan	electric
Radiator	four-core
Generator	12V
Heads	Buick ported
Valves / Springs	stainless / COMP Cams (Memphis, TN) dual
Rockers	steel
Valve covers	custom made by owner
Manifold / Induction	custom by owner / Holley 94s
Ignition / Wires	PerTronix / 8mm
Intake / Header	Finishline Coating (Milwaukie, OR)

TRANSMISSION

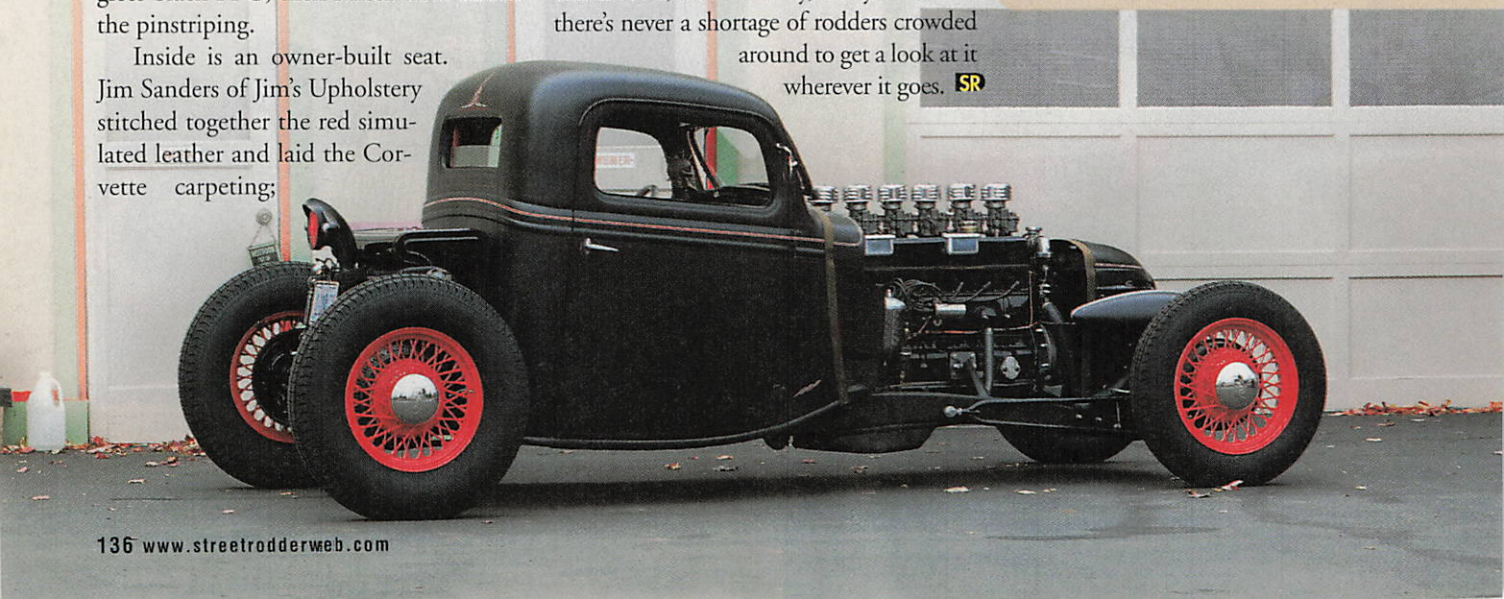
Make	Ford T5
Clutch disc	10 1/2"
Pressure plate	Ford diaphragm
Shifter	Hurst short shift
Driveshaft	Driveline Service (Portland, OR)

BODY

Body style / Material	pickup/steel
Body manufacturer	FoMoCo
Body mods	chopped & channeled
Grille	'47 Diamond T truck sectioned 5"
Bodywork	chopped 4" & channeled 4"
Paint type / Color	John Deere / Blitz black, or PPG / gloss black
Painter	owner
Graphics	pinstriping by Mitch Kim (Clackamus, OR)
Headlights / Taillights	'40 Packard / custom made by owner
Outside mirror	SO-CAL Speed Shop NW (Tualatin, OR)

INTERIOR

Dashboard	stock '36 Ford pickup
Insert / Gauges	Stewart Warner (Lancaster, PA) Wings
Wiring	Bob Milner & Ray Ross (Portland, OR)
Steering wheel	Mooneyes (Santa Fe Springs, CA)
Steering column	custom by owner
Interior mirror	gift from a friend
Seats	bases by owner
Upholsterer	Jim Sanders, Jim's Upholstery (Oak Grove, OR)
Material / Color	faux leather / red
Carpet	Corvette / red



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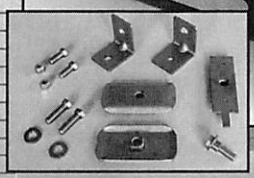
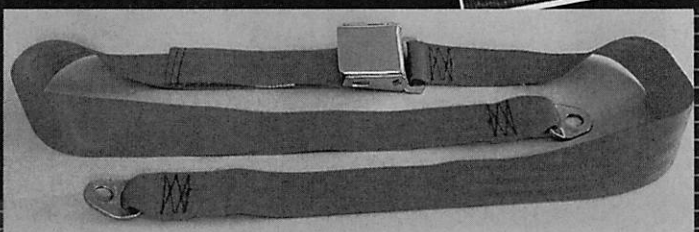


Installation kit included.



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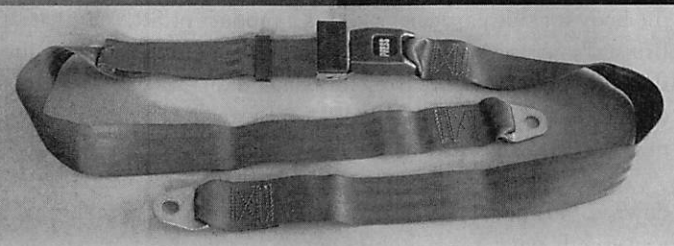
Installation kit included



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Bench Seat Push Button Mini-Retractable
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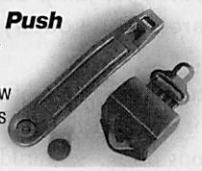

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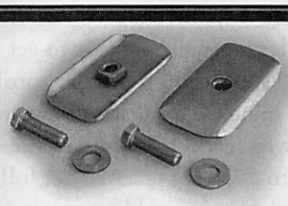

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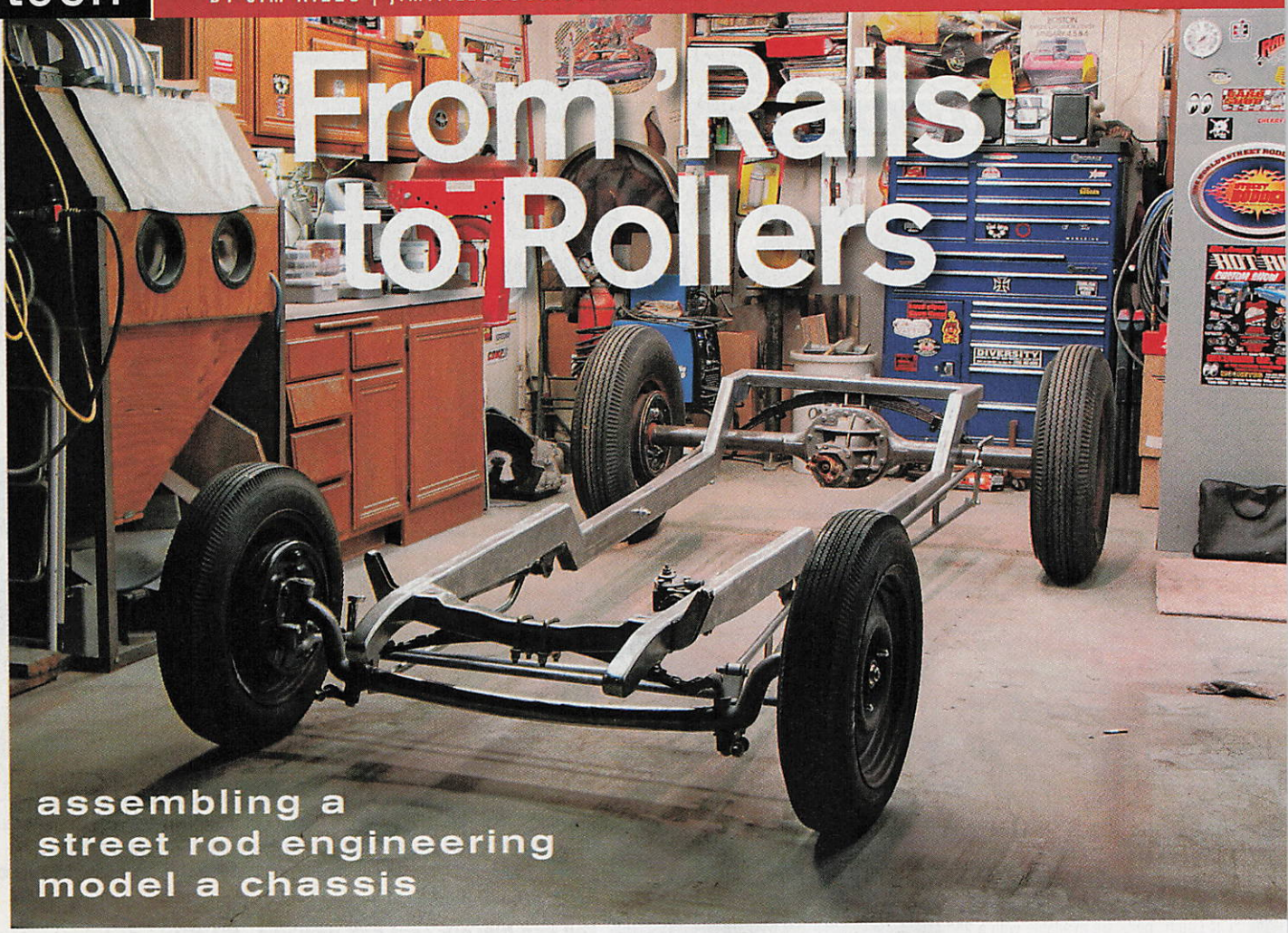
BY JIM RIZZO | jim.rizzo2@sourceinterlink.com

From Rails to Rollers



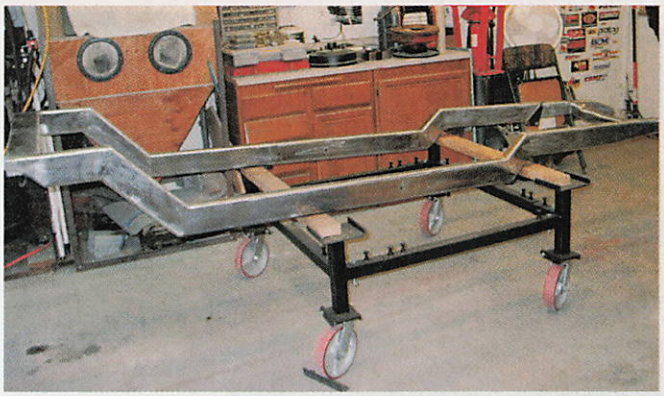
assembling a street rod engineering model a chassis

Not every rodder-to-be is going to tackle a ground-up hot rod build that includes fabricating a chassis or frame from scratch—especially a first-timer. Luckily the aftermarket is rife with quality offerings in this respect, and purchasing a perimeter frame or chassis package is an affordable option that goes a long way in our quest for instant gratification with our hot rod projects. Leaving frame and/or chassis engineering and fabrication to a professional is an easy and really cost-effective method for jump-starting a project—especially when compared to the outlay required to purchase a turnkey hot rod.

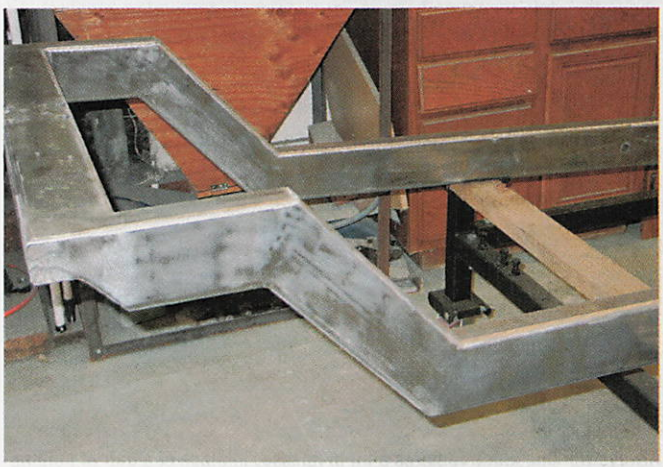
With this in mind, I decided to turn to a professional to supply me with the foundation for my next hot rod project rather than go through the tribulations of chassis building like I did with my Homebuilt Hot Rod. To this end, I shopped around quite a bit, which was actually a pretty tough job in itself, as there are a lot of quality manufacturers out there making some really nice products. This time around, though, I chose to deal with Tom Pierce of Street Rod Engineering/Bruiser Enterprises over in Lake Havasu City, Arizona. SRE has been fabricating frames, chassis, and IFS systems for 20 years, and I'm familiar with the company's selection, quality, and service. In addition, the fact that the body for this particular build is a product of SRE's affiliate, Bruiser Enterprises, pretty much made for one-stop shopping in the body and chassis department. Plus, I didn't want a standard, off-the-shelf frame for my Model A—I wanted a frame built to my specs, and SRE was more than happy to oblige.

After discussing my needs and wants with Tom, he got right down to business and stitched together a frame assembly that was exactly what I was looking for. A few weeks later, he gave me a shout and told me my frame was ready for pickup (luckily I'm only five hours or so from the shop, so picking up the frame was an option for me). I made the trip out to SRE a few days later, happily snagged my treasure, and beat feet back to the Inland Empire—ready to get to work.

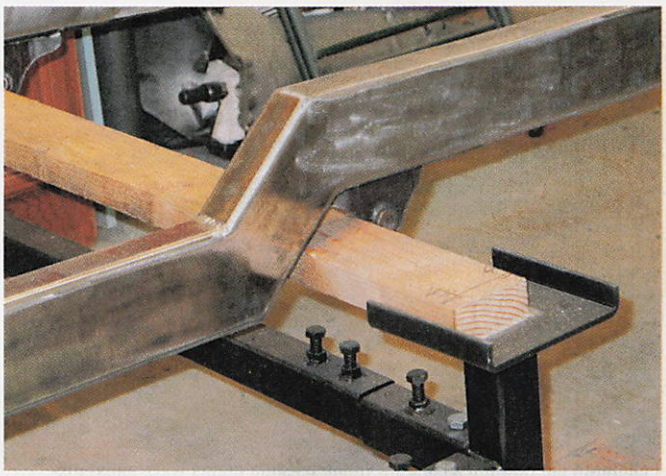
With a high-quality, professionally built frame assembly in hand, and most of the needed accessories on hand as well, I was ready to pre-assemble my newly acquired components into a rolling chassis. So, follow along and see just how quick and easy assembling a hot rod foundation can be when you start out with quality components, SRE's 20-plus years of chassis-fabrication expertise, and a slew of aftermarket components behind you. SR



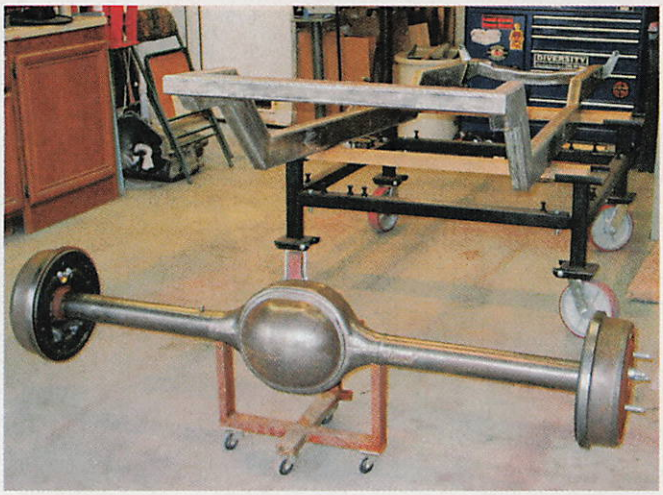
The subject of this Saturday assembly chore is my brand-spankin'-new Street Rod Engineering Model A frame. SRE frame and complete chassis packages are the result of 20-plus years of street rod chassis-fabrication experience, and the company's 2x4x.120 rectangular tube construction will make a fine foundation for my next build—a '29 A pickup. Aiding in storage and assembly is my workhorse Universal Body Cart from the Eastwood Company. The body cart not only allowed me to easily store and move around my frame, but also adjusts in width to facilitate storage, movement, and working ease on car and truck bodies, beds, and components.



SRE happily accepts special-order requests like mine. With my affinity for slammed hot rods, I requested my frame be Z'd both front and rear. The rear kickup shown here measures 9 inches.



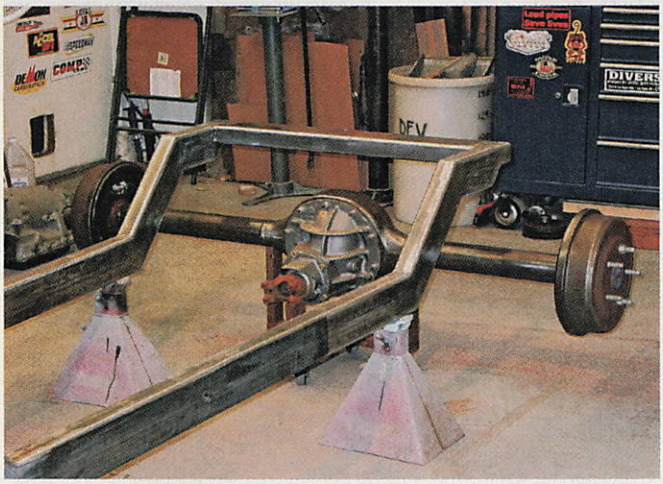
The front section was Z'd 4 inches, which is the width of the 'rails used in the frame's construction; this should get my pickup right down near the ground, just where I want it.



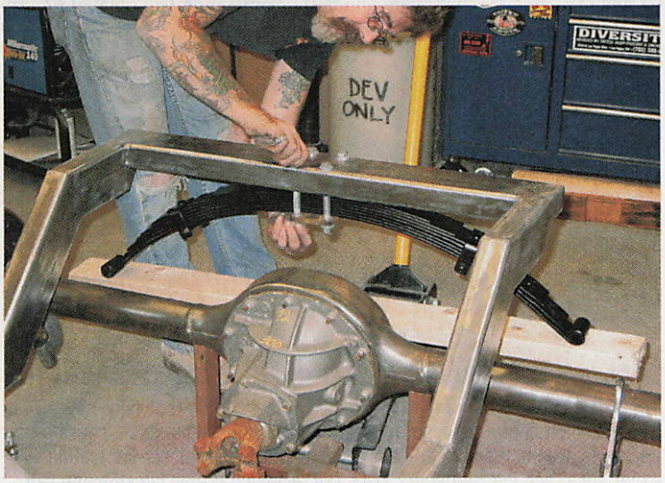
A Currie Enterprises 9-inch hot rod rearend assembly equipped with 3.00:1 gears, 28-spline axles, and big brakes will be more than hearty enough to handle whatever driveline I choose to run in the pickup.

Up front, I chose what I think is a great combination of components: a pair of SRE radius rods (though I mistakenly laid out the rears instead of the fronts for this shot), a POSIES Super Slide spring, a Borgeson dropped-tube axle, and a host of Pete & Jake's steering arms, batwings, and hardware.

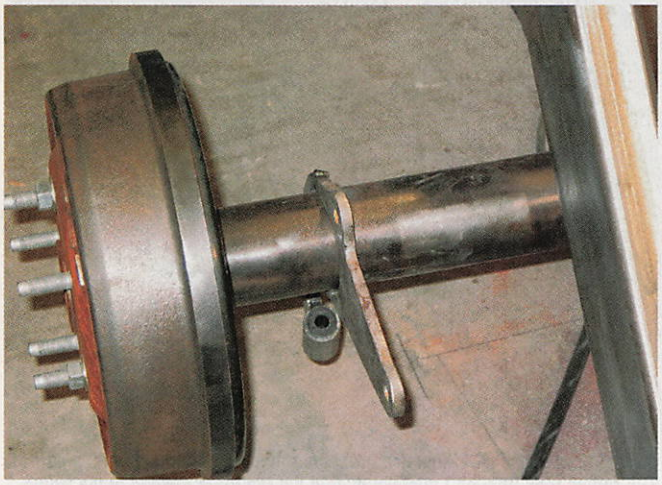
Since the pickup is destined to be old-school style (as all my projects are), I opted for a quartet of Rally America 12-Series Smoothie wheels (16x4s and 16x5.5s) that'll be wrapped in Coker/Firestone bias-ply blackwalls in 4.50/16 and 8.20/16 sizes for the ultimate in traditional big 'n' little style.



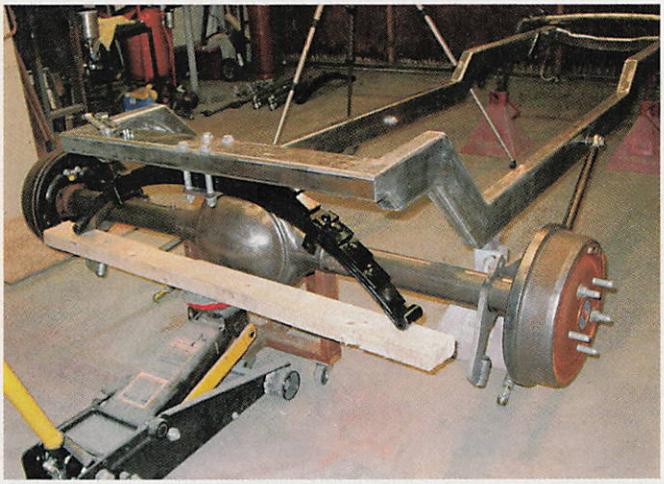
Once I dug out and laid out all my needed components so they were handy, I started by rolling the Currie rearend roughly into place.



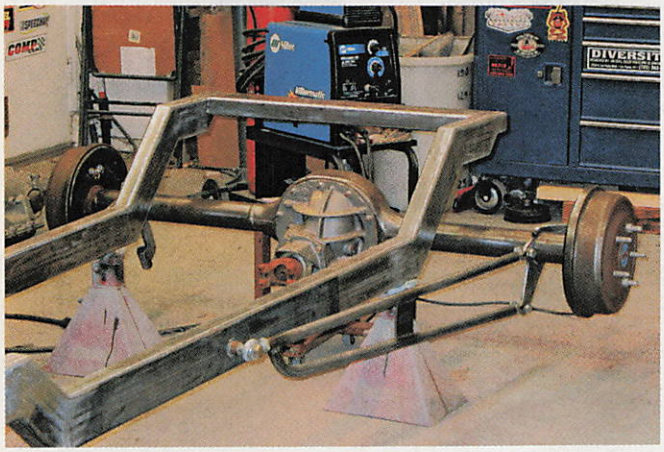
I then grabbed my POSIES Super Slide rear spring and hung it from the frame's rear crossmember—making sure its locator pin fit snugly into the predrilled hole in the crossmember so it was correctly centered.



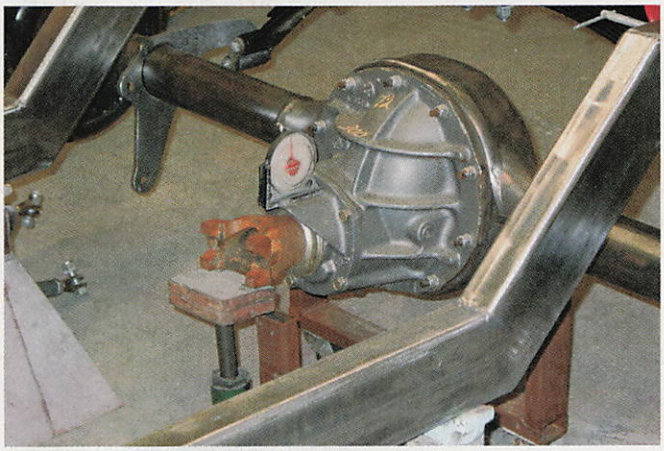
I started out by splitting my rear spring hangers into two pieces since the rearend was already a completely assembled unit. I then hung them around the axle tubes and tacked 'em back into one piece.



Always working alone requires a bit of finesse. In place of a pair of helping hands, a 2x4 laid across the floor jack aids in lifting the spring and holding it into place while installing the hanger bolts.



With the spring hangers swingin' on the tubes, I grabbed the radius rods and set the Heim joints to the center of their threaded length (making sure I treated the threads to a helping of antiseize compound) and attached them to the 'rails up front and the spring hangers at the rear.



I centered the rearend assembly so the backing plates were equal distances from the framerails and attached the spring to the still-unattached spring hangers, using a small bottle jack to set my pinion angle to a 3-degree upward orientation.

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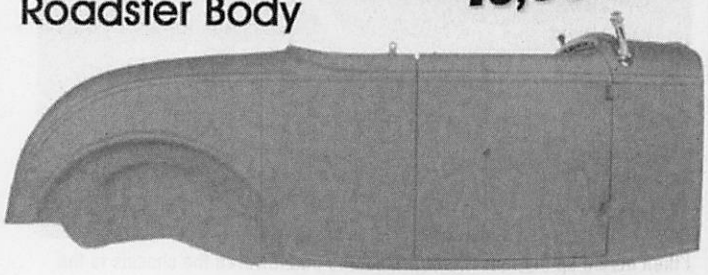

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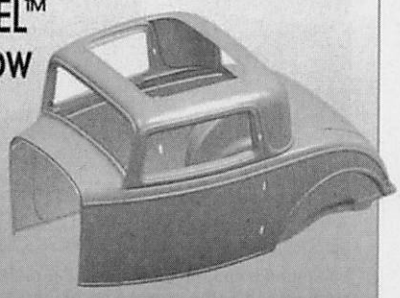
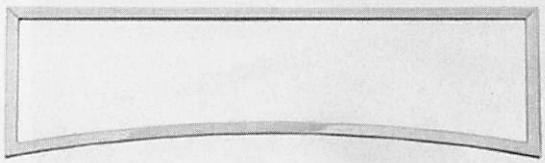
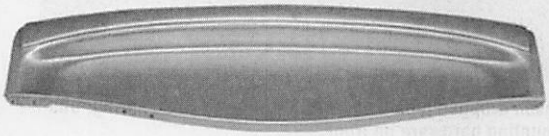


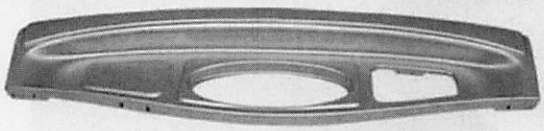
1932 Chopped 2" Chrome Windshield Frame....$375.00



1932 3 Window Smooth Dash.....$595.00



1932 3 Window Stock Dash.....$895.00



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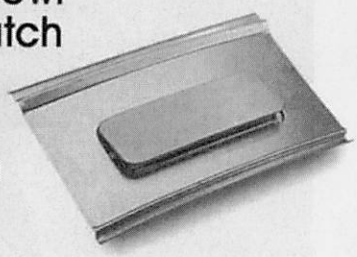

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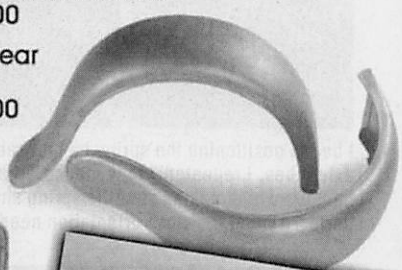

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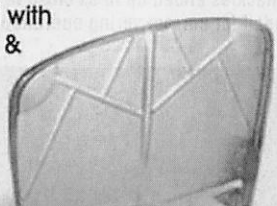

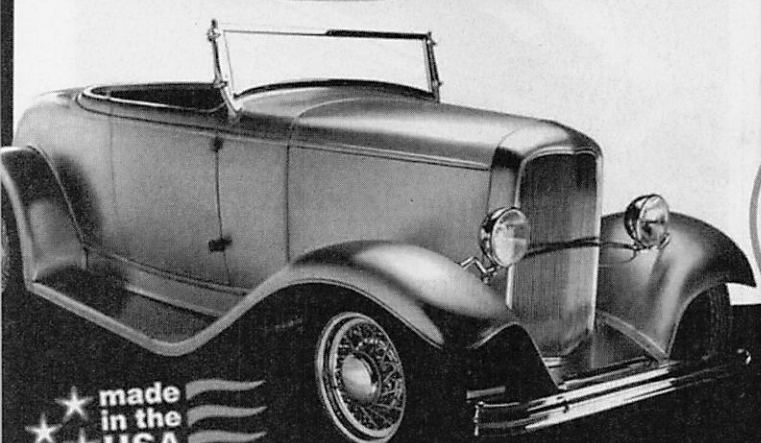

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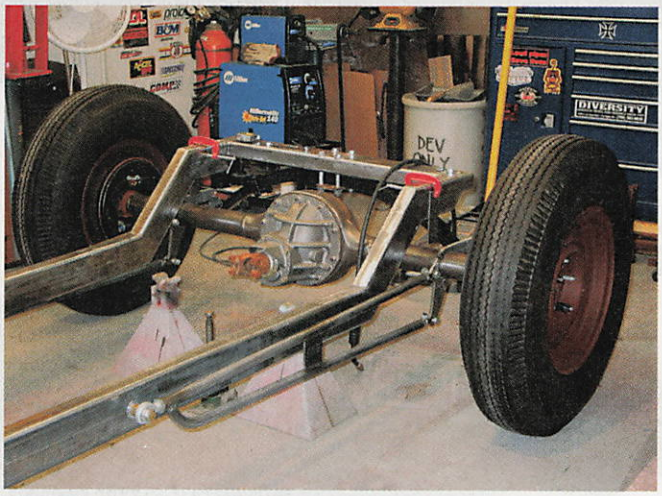
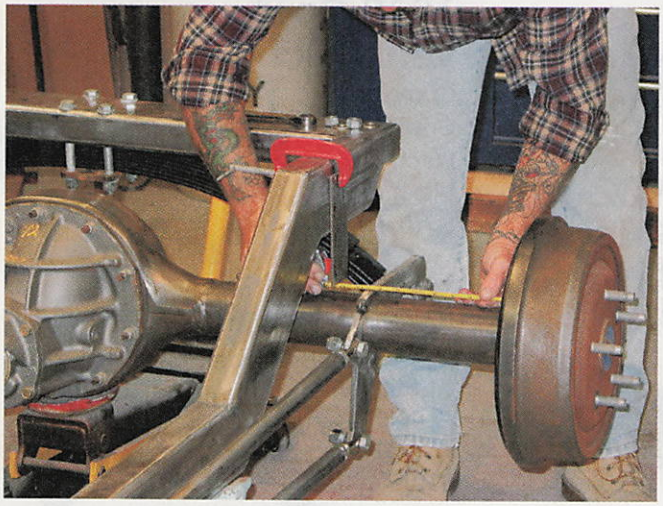
I clamped a couple of pieces of flat plate to the framerails to help accurately center the rearend assembly (a chore I repeated often during the course of assembly).

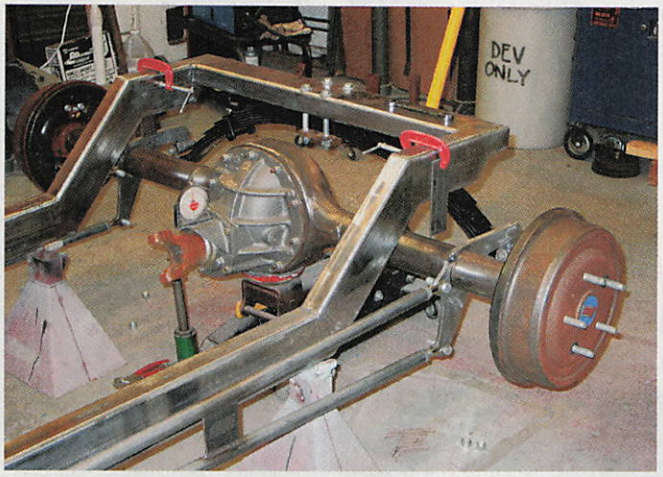


I then bolted up my rear wheel/tire combo and lowered the chassis to the ground. Now to the front of the frame.



I began positioning the spring hanger/radius rod mounts equally on the axle tubes. I repeatedly took measurements from the backing plates to the hangers while making sure the spring shackles ended up in as close to the perfect 10 and 4 o'clock orientation needed for correct spring operation.

I utilized a Borgeson dropped tube axle, a POSIES Super Slide spring, and Pete & Jake's mounting hardware up front.



I tack-welded the hanger/brackets to the axle tubes with everything in place and triple-checked my measurements.

Frontend assembly is a straightforward affair. I started out by installing the batwings over the axle and the axle side shackle mounts through the wings and axle (be sure to use a liberal coating of antiseize compound on the shackle mount shafts). The lower shock mounts and nuts follow next. The spring can then be attached to the mounts using a pair of spring shackles. I found laying the axle and spring on a couple of 2x4s as shown makes assembly a bit easier.

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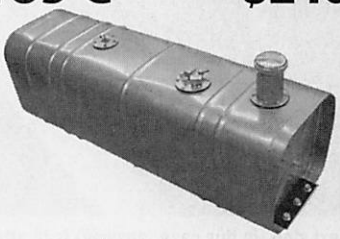

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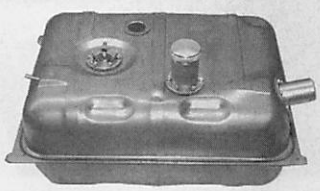

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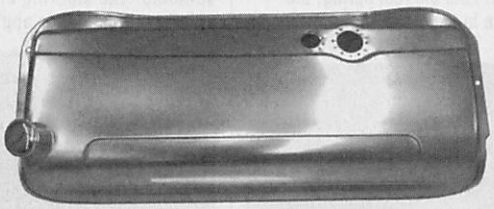

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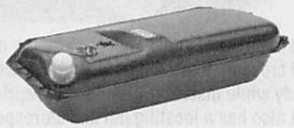

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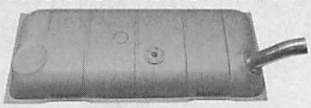

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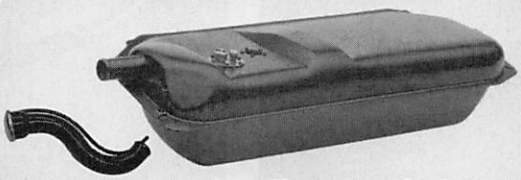

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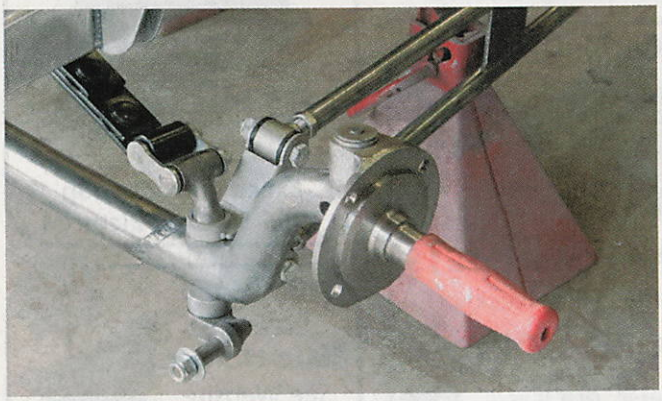
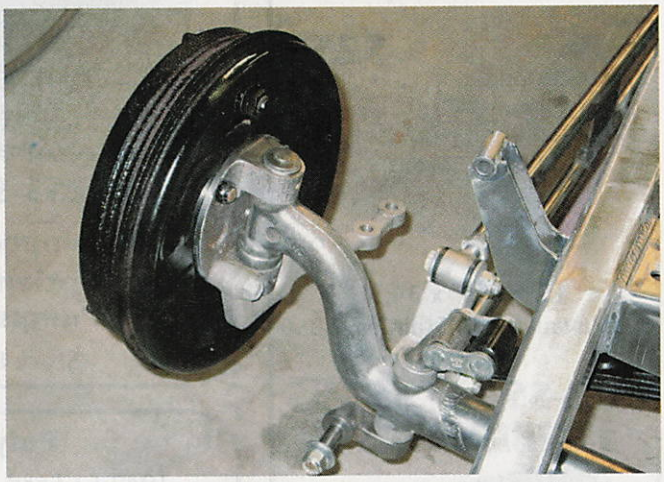
With the axle assembly completed, the next step was to install it into the frame's front crossmember. A floor jack works well for this step and holds the assembly steady while inserting U-bolts and a spring retainer. Like the rear spring, the front also has a locating pin and corresponding hole in the crossmember.

I've been hearing it for years, too—don't use hairpins with a tube axle. Maybe so, but I've yet to see an example of the axle damage alluded to by those naysayers in my 35 years of rodding (it's common practice to use a four-bar setup with tube axles to prevent stress-cracking the forged axle ends, as tube axles don't have the torsional flex found in I-beam axles), so I'm going for form over function in this case. The SRE hairpins attach to the batwings up front and the radius rod mounts on the frame. You'll want to adjust the rod ends on the radius rods (both sides equally) to maintain the kingpin inclination built into the front crossmember and to keep the axle square.



The next step involves the spindles and kingpins. Here I used a pair of Pete & Jake's '37-41 Ford units. Keep in mind that there are definite tops and bottoms to the spindles—the large flanges sit atop the axle. Also remember to lube the kingpins before sliding them into place.

With the spindles mounted, the next step (in this case, anyway) is to attach the backing plates (I used F-100 drum brakes) and steering arms to the spindles. The steering arm with two ball joint holes is located on the right side in a cross-steer application.



After the backing plate and steering arm were bolted in place, I then slipped the drum/hub assembly onto the spindle and installed the spindle nut to keep it on. The procedure was then repeated on the left side of the axle.

The steering was the next step. I bolted up the Borgeson 525 box I'd chosen to use rather than the Vega box most folks use. The 525 is a bit larger but a sturdier unit than the old standby Vega unit.

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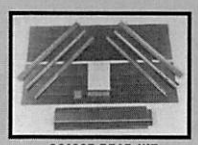

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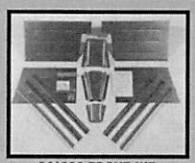

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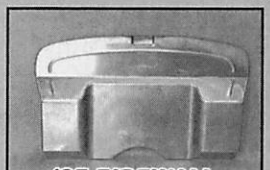

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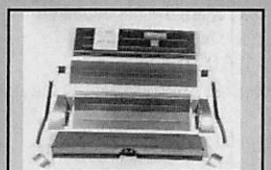

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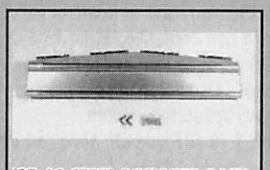

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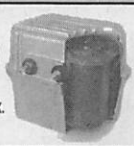

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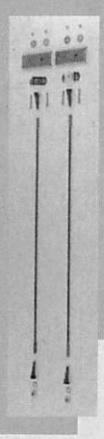

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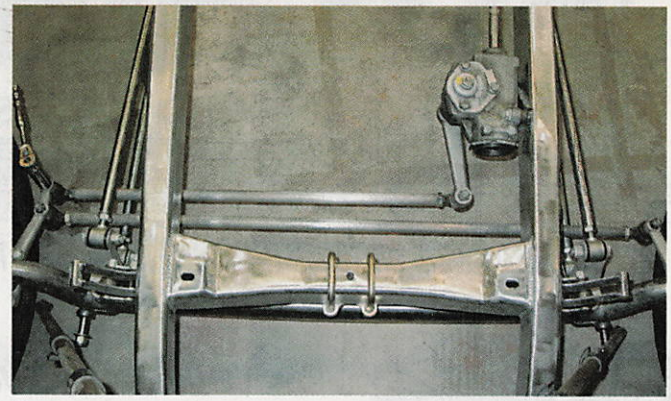
The tie rod and draglink were next once the box was in place and tightened up.



The tie rod runs from steering arm to steering arm and the draglink runs from the pitman arm to the right-side steering arm, as shown.

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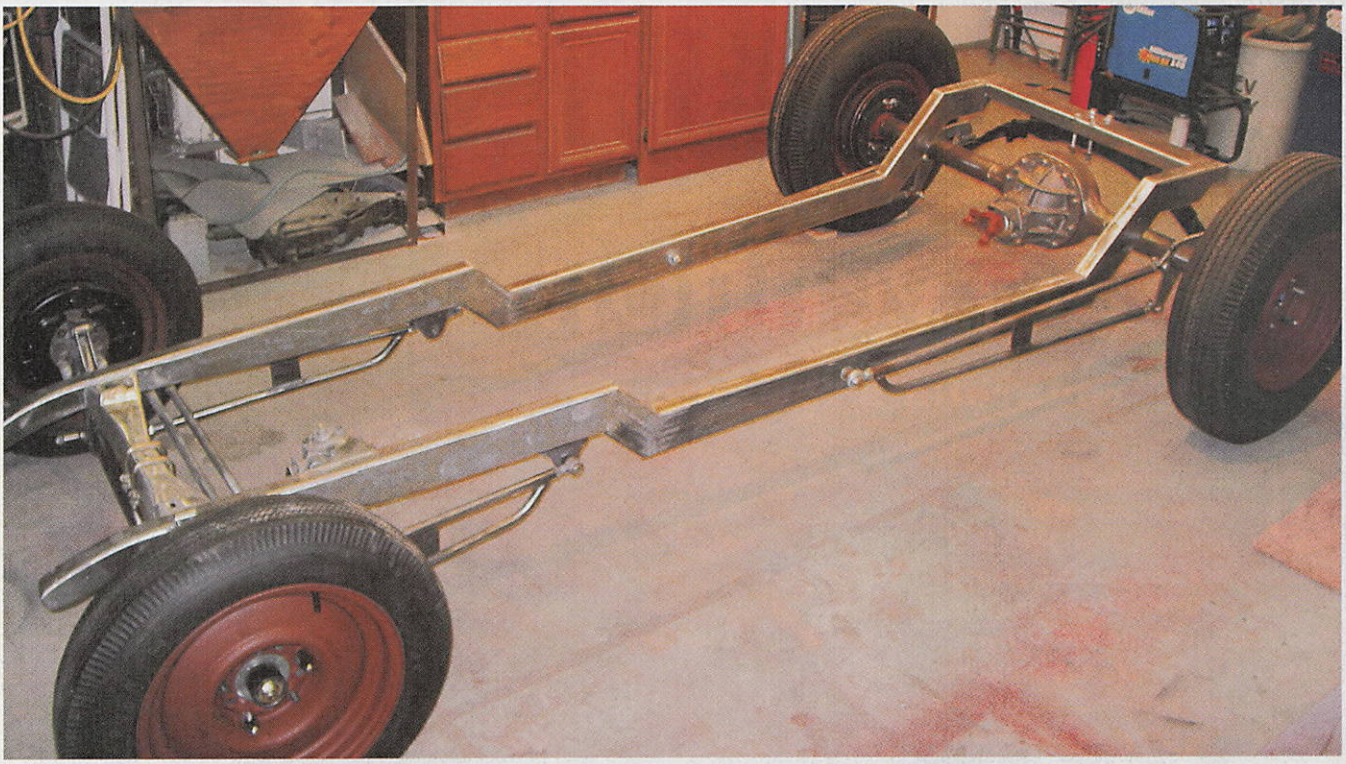

And here ya go—up and rolling in a matter of a few hours. Of course, there are a few chores left before the job is really complete. The rear spring bracket/radius rod mounts need to be finish welded, the rear shock mounts installed, and the front Panhard bar installed, but I think you get the gist—assembling a chassis ain't rocket science. Keep your eyes peeled and we'll finish up this chassis assembly in future issues. Until then, get out in the garage and get to work!

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Divine Intervention

rich zavarella's '60 impala

BY ERIC GEISERT

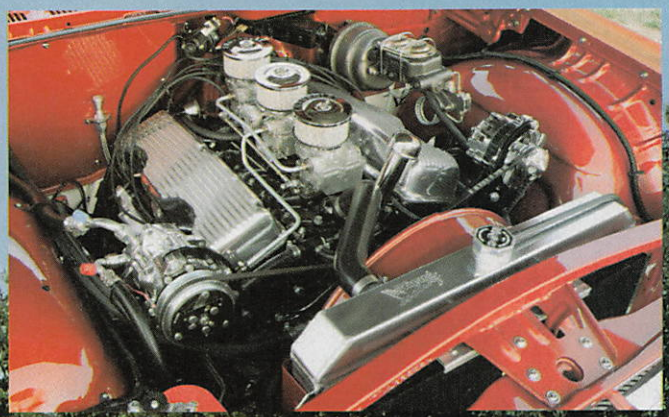
So you're living in upstate New York, you've built a handful of street rods in your life, and you stumble across a pristine '60 Chevy Impala that has lived most of its life in Southern California. You think about buying it, mostly because your sister used to drive a '59 Impala with a 348 and you've always liked them.

But then you find out that a little old nun, named Sister Josephine, not only used to own the car, but she lived in Paradise, California. Call it a sign from God, but Rich Zavarella didn't need to be shown the light to know he wanted to have that Chevy in his garage!

Rich, from Lancaster, New York, bought this '60 Impala in July 2006 and had one cool ride rolling out of his home shop in less than a year. Though rodders in the West don't think about rodding in the winter any differently than they do in the summer, it's a different case with those who have experienced the Lake Effect—where snow can fall in your driveway faster than you can shovel it off!

Rich knows winter months are for rod building, and, though his Chevy was very nice to start with, he decided a full-blown body-off was in order. First the chassis got media-blasted and then powdercoated before an Air Ride Technologies airbag system went in on each corner. Dropped spindles from Superior give the car the proper rake while Camaro rotors with GM calipers provide the whoa (stock drums are used out back). Billet Specialties 20-inch (8.5- and 10-inch) highboy wheels are shod in BFGoodrich g-Force ZR20 rubber (255/35 and 295/40), and, though several inches larger than what went on the car at the factory in 1960, Rich reports no rubbing (but it *is* close when he slams the 'pala to the ground!).

Bruce Kalinowski, from BRK Performance in Aldan, New York, went through



You don't need much else besides the finned valve covers from Moon Equipment and a Tri-power carb system to make the underhood look sharp! Just the right amount of polished aluminum and a great attention to detail got the job done.

After hearing from an old-timer that a Mercury grille "bolts right in" to an Impala, Rich had to find out for himself. Turns out it doesn't, and it was tough mating the Merc part to the opening, but it sure looks right!

Rich's 348 small-block adding .10-over pistons, a Crane cam, and stock rods before topping it off with a set of finned Moon valve covers and a Tri-power carb setup. Other engine items include a 140-amp Tuff Stuff alternator, a radiator from Wizard Cooling, and HPC-coated headers. A Powerglide trans was fitted with a shift kit before being reinstalled and mated to the motor.

Not being much of a "custom" guy (he'd built a '35 Plymouth, Model A pickup, a '34 sedan, and a couple of '37 Fords before this car), he looked to do something with his ride that would set it apart. On hearing from an old-timer that a '60 Mercury grille would "bolt right in," Rich thought he'd give it a try. Turns out the old-timer must have been high—the grille swap was difficult because nothing lined up, but the finished product looks like what the factory could have done.

Though much of the original exterior trim pieces were intact (needing to be spruced up), Rich decided to shave the door handles and trunk trim before painting the car, but he had yet to pick a color. At Dover Speedway one weekend with his wife, Rosie, she spotted a pair of cars over in the Dodge booth—a vanilla-colored Magnum with a burnt orange R/T pickup parked next to it. She asked Rich, "What about those two colors?" and he knew it would work after seeing the two colors parked together. Working closely with his friend, Dave Gleason, in Dave's two-car garage, the pair did all the bodywork before spraying the Dupont-mixed colors. This month-and-a-half body and paint process was decidedly low-tech, with no downdraft exhaust system or even heat, but the paint job turned out great.

For the interior, Rich turned to a 70-year-old friend named John Salerno, who says he "has too much fun" doing interiors to retire. John did Rich's car the old-fashioned way by stripping all

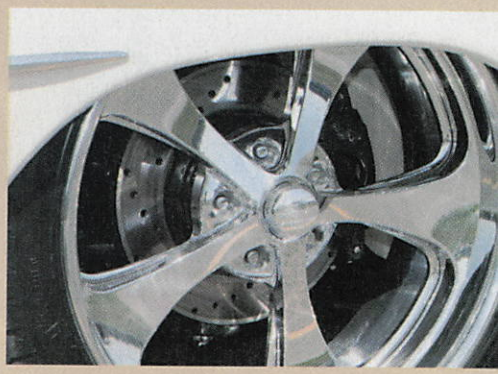
With only some minor shaving to the exterior, the interior was pretty much left alone, but all the trim was cleaned up and the dash was painted in the same DuPont burnt orange in which the exterior was done. Rich used an A/C system from Classic Air, and a stereo system from Classic Radio backed up with Infinity speakers.

the material out of the car, making patterns, stitching up the leather (using '65 Nova buckets up front), and creating a stylish contemporary interior. The dash had been painted the exterior's burnt orange, and it contrasts nicely with the tan leather and cinnamon carpet John laid out.

While the car was reassembled in Rich's garage, his friend, Bill Richmond, would stop by and help him by lending an extra set of arms when hanging fenders and the like, which came in very handy. Having only recently finished his ride, Rich hasn't had an opportunity to go to too many car shows with it, but intends to hit as many Goodguys events as he can in '08.

For a guy who grew up in the muscle-car era, 56-year-old Rich has always liked cars (he even raced go-carts when he was 9). When he graduated in high school in 1970, all he wanted was a big-block Nova, and, a few decades later, he recently got his wish. Now a proud owner of a 61,000-mile '71 Nova, he has plans to install a 396 and have some fun.

He still owns the '48 Ford convertible he'd built previously, so by this time next year, the trio of hot rods in his garage should be something anyone would envy—if it weren't one of those pesky seven deadly sins. After all, Sister Josephine wouldn't approve of that, though she just might be tempted to take a ride in Rich's too-cool Chevrolet. SR



Even with the big-inch 20s under each corner, Rich doesn't have a problem with the BFGoodrich rubber scraping the fenders (he says you can achieve that with the proper wheel offset). Camaro rotors and GM calipers make up the brakes up front, while drums continue to work fine out back.

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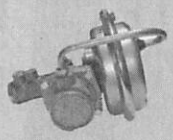
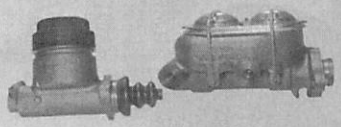
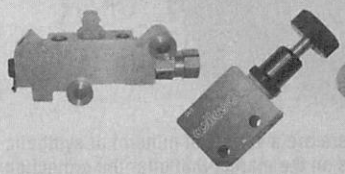


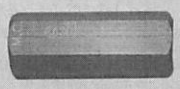
Master Cylinders



Proportioning Valves



Residual Pressure Valves



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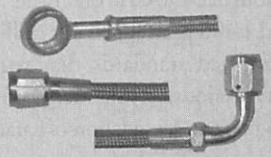
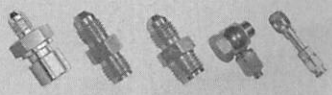
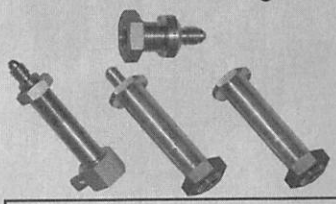
S.S. Braided Brake Lines



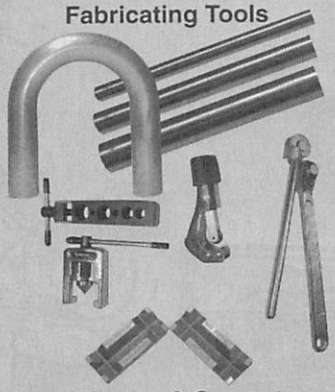
Brake Adaptor Fittings



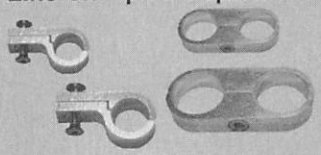
Thru-Frame Fittings



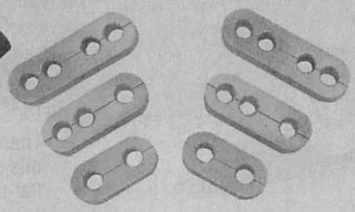
Stainless Steel Tubing & Fabricating Tools



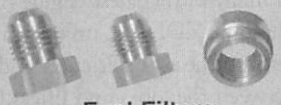
Line Clamps & Separators



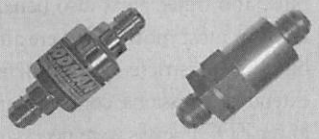
Plug Wire Separators



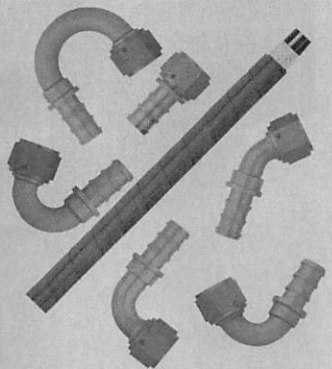
Weld in Bungs



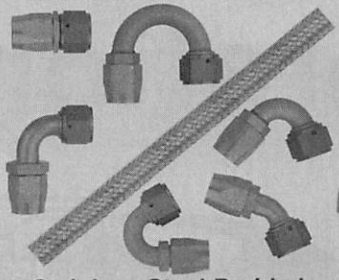
Fuel Filters



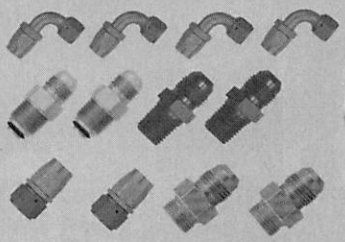
Socketless Hose & Hose Ends



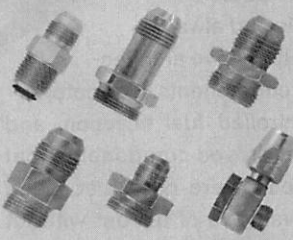
Stainless Steel Braided Hose & Hose Ends Available in Red & Blue or Electroless Nickel



Stainless Steel Braided Hose Kits for Power Steering

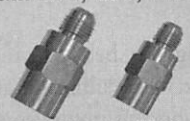


Carburetor & TPI Fittings



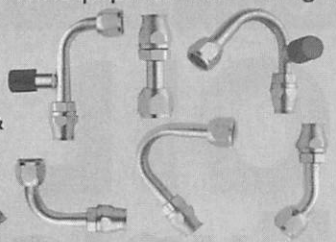
GM LT1, LT4, Fittings

FORD EFI Fittings



Spal Fans

Aeroquip AC Hose Fittings



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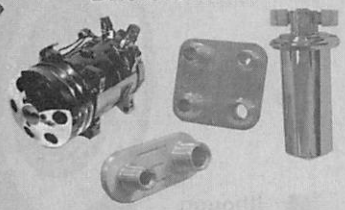

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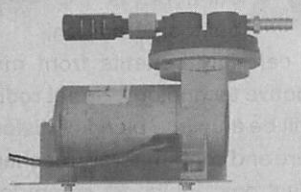
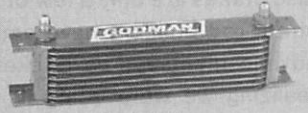


Setrab Oil Coolers



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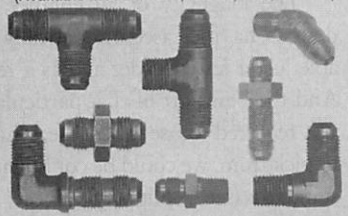

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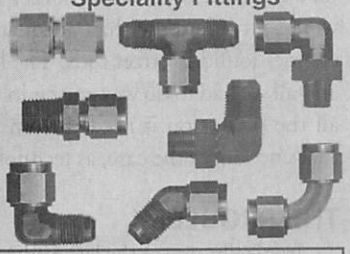

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OIL Exploration

what every street rodder needs to know

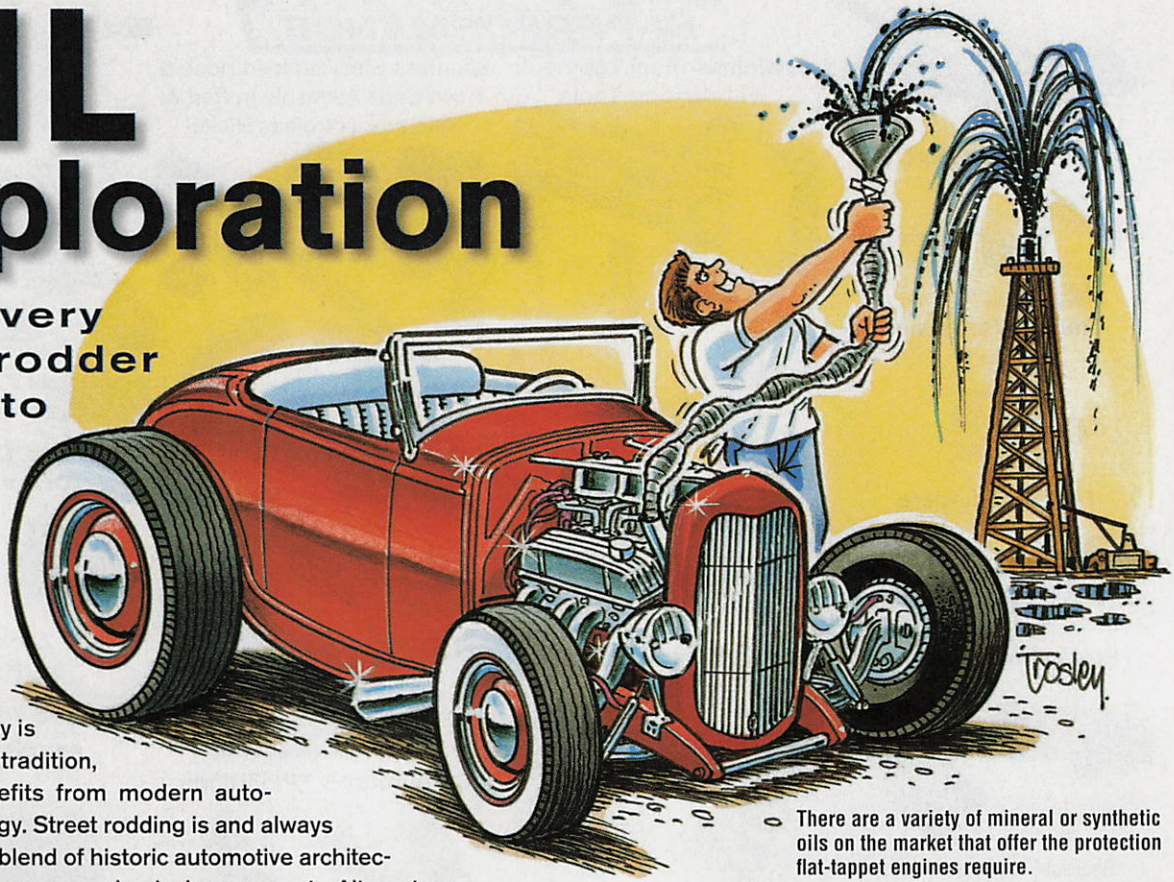


ILLUSTRATION BY GEORGE TROSLEY

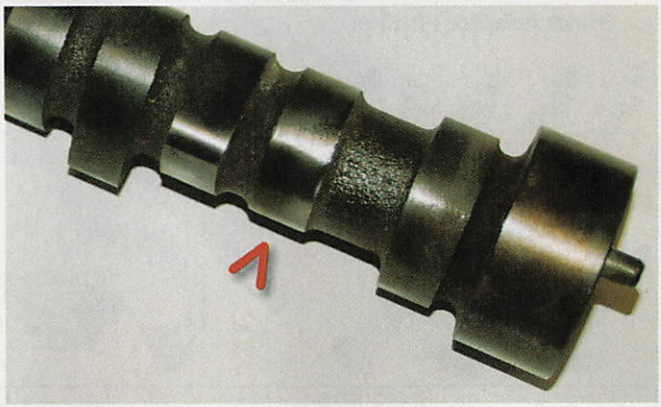
There are a variety of mineral or synthetic oils on the market that offer the protection flat-tappet engines require.

Although our hobby is built on tradition, it certainly benefits from modern automotive technology. Street rodding is and always will be a unique blend of historic automotive architecture and contemporary mechanical components. Alternators, electronic ignitions, computer-controlled fuel injection, and disc brakes are only a few of the improved components that street rod builders have embraced. There have also been advancements we have taken advantage of almost without realizing we were doing it; specifically we're speaking of modern engine oil.

The longevity of all engines, including our beloved vintage designs, has increased dramatically compared to the lubricants available just a few decades ago as a result of lubricant improvements. And the best part of that particular technology was that no effort was required to use it because, while there were many brands of oil to pick from, we could be confident that any that met the latest API standards (see "A Slippery Subject" in the February '07 issue of *SRM* for a complete explanation of API standards and SAE designations) would provide more than adequate lubrication for the majority of engines found in street rods. The latest oil was indeed the greatest, and all we had to do was pour it in to provide our street rod's engine all the protection it needed from premature wear. Unfortunately, that's no longer the case, as technology has thrown us a curve.

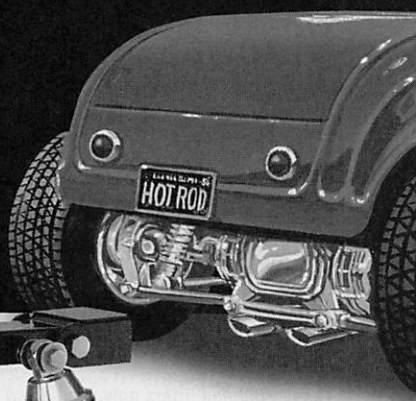
THE PROBLEM

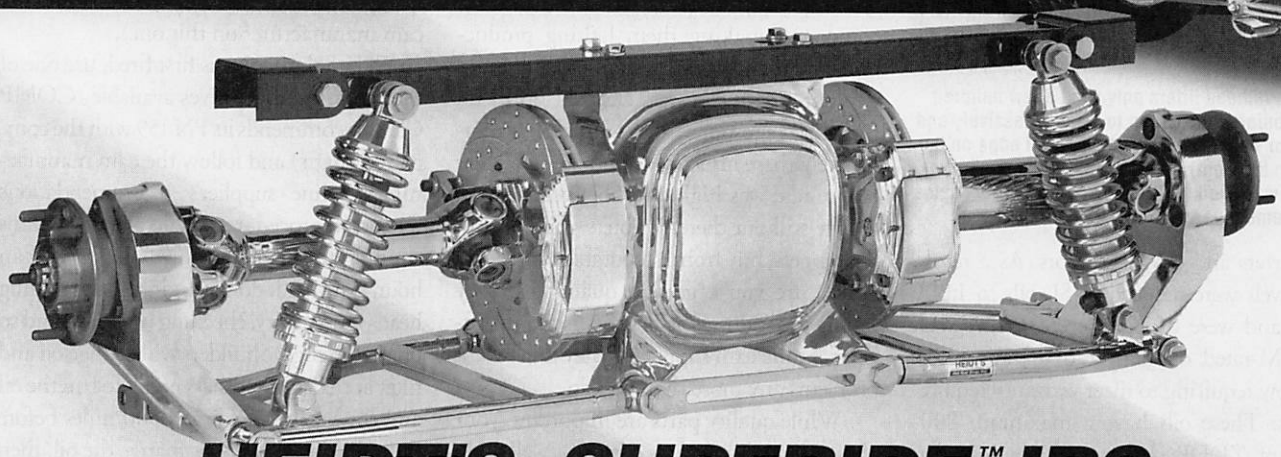
Ironically, one of the latest advancements in automotive technology has turned out to be a step backward for aficionados of early iron. In a nutshell, the issue is premature cam wear in some engines with flat-tappet cams, and it's due to the reduction of an important anti-wear compound, zinc dialkyldithiophosphate (ZDDP), in many of the latest engine oils. A combination of zinc and phosphorous, ZDDP is unique in that it bonds to the camshaft as a result of heat and friction and actually creates a sacrificial coating between the lobes and lifters (pushrod ends, valve stem tips, wrist pins, and other parts also benefit from ZDDP). At one time, zinc levels in most motor oils were around 1,400 ppm (parts per million), but due to stricter government-mandated standards that require extended emissions control warranty periods, it was decided that lower ZDDP levels were necessary to prevent degradation of catalytic



With reduced levels of ZDDP, new and high-performance flat-tappet engines are in jeopardy. The arrow points to where a cam lobe used to be. On top of the obvious performance problems a missing lobe causes, all that worn-off metal is pumped through the engine, causing additional wear and damage.

BE INDEPENDENT, IT'S BETTER WHEN IT'S HEIDT'S!SM





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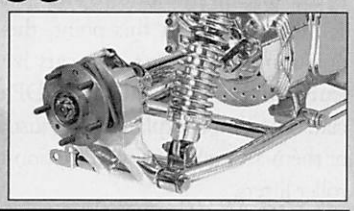

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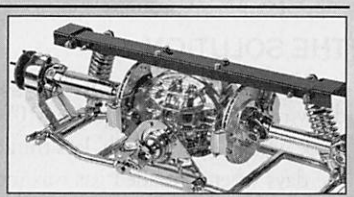

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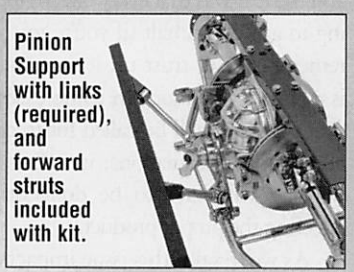

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These Flathead lifters only went a few hundred miles before they began to wear excessively and the cam went flat (note the worn left edge on the lifter to the right). The second time around, diesel oil was used for break-in with the exact same replacement parts without any problems.

converters and oxygen sensors. As a result, the levels were reduced in SL oils to 1,000 ppm and were dropped even further with the SM-rated oil that auto manufacturers are now requiring to meet warranty requirements. These oils have a maximum 800-ppm of ZDDP. To properly protect flat-tappet engines, particularly the performance variety, most experts agree that 1,000 ppm is the absolute minimum, and some prefer 1,100 to 1,200. At this point, the obvious question is why don't new cars have problems with cams going flat if ZDDP is so crucial? The simple explanation is just about all of them are equipped with friction-reducing roller lifters.

THE SOLUTION

Now, before you run out to the garage and drown your sorrows in a quart of 10W-40, for those who are old enough, let's think back to the days when unleaded gas was introduced and the fear was that every old engine was going to grind to a halt (if you're too young to remember that, trust us, it happened). This is a similar situation. In some cases, engine modifications will be called for to cope with changes in formulations; in others, little or nothing will have to be done other than selecting the proper product.

As we've said, this issue impacts engines with flat-tappet cams; new engines that are not broken in, and new and used performance engines with greater-than-stock valve spring pressures are most susceptible to damage (mild, stock engines that are completely broken in seem to tolerate the reduced zinc levels with little or no adverse effects). Let's take a look at some of the things that can be done to prevent problems in those engines that are susceptible to damage.

Improved Parts

If there was ever a case of getting what you pay for, lifters are a prime example. There was a big shakeup in the flat-tappet business a few years back—buyouts and bankruptcies resulted in two of the four companies making them halting production, and there was lifter shortage as a result. Offshore manufacturers cranked up to fill the void as a response to the situation; unfortunately these lifters were poor at best, their failure rate was high, and the worst part is they're still out there. If you're going to run flat tappets, buy from a reputable source and make sure you're getting quality parts by asking questions. The best bet is to buy lifters from the cam supplier—they don't want problems any more than you do.

While quality parts are important, your choice of quality parts is critical as well. Talk to the cam manufacturer and follow their recommendations for related parts; pay particular attention to installed spring heights so open and closed valve pressures are correct. In some cases, there are modifications to the engine that can prevent problems. Rod side clearances on the loose side will help, as the oil tossed off the crank as it rotates is the cam lobe's/lifter's only source of lubrication; if the engine came with a windage tray, leave it out, and additional oiling to the cam/lifer interface can be provided by special lifters such as those offered by COMP Cams that have oil supply holes to the lifter face/cam, or by grooving the lifter bores (full-floating piston pins are also a wise choice to prevent problems in that area). Then, of course, if there are retrofit roller tappets and rocker arms available for your engine (or if they're an option on the crate engine you're considering), they are definitely the way to go.

Start-Up/Break-In

More than ever before, the procedure used when first starting a fresh engine and breaking in a new flat-tappet engine is critical. The best way to ensure there are no problems is to follow the cam manufacturer's (or engine supplier's) procedures to the letter. If you're building your own engine, use plenty of quality assembly lube on the cam and lifters; with any engine—homebuilt or crate—prime the oil pump, oil lines, and fill the oil filter with oil using an auxiliary pump, operating the internal oil pump with a hand drill or an external pressure tank. If the engine is equipped with stiff valve springs (more that 160/170 lbs of pressure seated, 290/300 open), lighter break-in springs may be necessary (check with the cam manufacturer on this one).

When the engine is first fired, use one of the break-in oil additives available (COMP Cams recommends its PN 159 with the company's 'shafts) and follow the cam manufacturer's/engine supplier's recommendations for run-in procedures. Generally that means running the engine at a fast idle for half an hour, shutting it down, and then re-torquing heads if necessary, checking valve lash and so on. Some engine builders will change oil and filter at that point; others prefer to run the oil and the break-in additives 500 miles before dumping it. We usually change the oil, then add another dose of break-in additive and run that for a few hundred miles. It's also advisable to keep idling time to a minimum until the engine is broken in; again, that's because the cam and lifters don't get much oil at low engine speeds.

Engine Oils

Although we were sworn to secrecy as to the source, a representative of one of the largest engine remanufacturing companies

There are a variety of oils on the market that offer the protection flat-tappet engines require. AmsOil recommends its synthetic premium protection, racing, or diesel oils. However, synthetics should not be used for break-in.

Pure Power! has a variety of mineral-based products for engines needing extra protection, including its Extreme High Performance 10W/30 CH-4/SJ and 15W/40 CI-4/SL oils.

Pure Power! offers its EHP engine treatment to increase film strength and add wear protection. It can be used with conventional and synthetic oils.

in the country admitted that they break in all their engines with diesel mineral oil. He offered two specific reasons for this. First was that the higher level of ZDDP offers increased protection to the cam and lifters, which was almost a given. The second will come as more of a surprise. They believe that because of the compounding, these oils are, in his words, "slightly less slippery," and promote spinning of flat tappets and biting of the rings to the cylinder walls, both of which help the break-in process. Although quite a few custom engine builders also agreed on diesel oil for break-in, others prefer racing oil and a few still rely on 30W non-detergent.

As we talked to various engine builders, we heard a variety of theories on the subject of oil for flat-tappet engines after the initial break-in period; diesel oil was a popular alternative. However, be aware that diesel oils have particularly high detergent levels. Those detergents "surround" deposits that accumulate in

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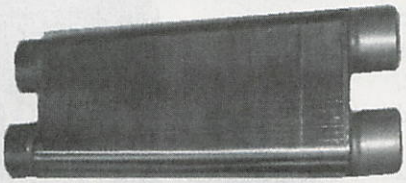

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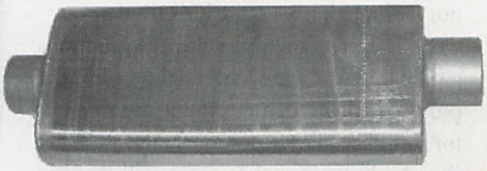

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the oil and hold them in suspension, so much of it drains out when the oil is changed. However, these detergents will also stick to the inside of the engine and may result in sludge-like residue inside the engine.

There are other oil options that have been suggested; some have tried marine oil—specified for use in four-cycle, water-cooled outboards—and motorcycle oil. But

Torco has three types of assembly lubes for specific parts of the engine; they are in liquid, gel, and aerosol form.

the fact is, all of these are stopgap measures because technology is closing in on us. Soon, catalytic converters will be mandatory on virtually everything with an internal combustion engine, and diesel, marine, and motorcycle oil will reflect that with lowered levels of ZDDP. We've been told that zinc is mandated to be 600 ppm or less by 2012, but don't panic—there are alternatives and more will likely become available.

For now, keep in mind the oils with the lowest ZZDP levels are those with the latest API SM service designation. Oils that don't meet that standard and are SL rated (check some of the high-mileage varieties), or are not API rated, have more ZZDP.

The fact is there are plenty of options available to provide any engine with the protection it needs (check out the side bar for some specific suggestions), and we'll bet Brennan's roadster that more will become available. As soon as one oil company starts targeting the needs of vintage engines that don't have warranty issues, others are bound to follow. We may not be able to stop technology, but at least we can cope with it. SR

New from Torco is its 40w TBO formulated specifically for breaking in new engines. Torco also offers ZEP (zinc enhanced engine protector) oil additive.

Torco has a variety of mineral and synthetic oils they recommend for high-performance flat-tappet engines such as SR-1 10w30 Synthetic High Performance, SR-5 20w50 Synthetic Race, and TD 15w40 Petroleum High Performance Diesel.

Here's the solution to the flat-tappet problem—roller lifters. If you can retrofit your engine, do it; if you're buying a crate engine, opt for them.

News from SEMA

Synergyn lubricants introduces a line of street rod products

Synergyn is a name that some folks may recognize from the company's 20-plus years of experience in producing high-end racing lubricants that have been widely used in the highest levels of motorsports, including NASCAR and NHRA competition. Recently, Synergyn has ramped up product development by consulting with some of the heavyweights of the industry, such as COMP Cams, Lunati, and TCI Automotive. The result is the creation of a new line of engine oils, transmission fluids, gear lubricant, fuel treatments, and specialty additives specifically made to meet the unique needs of street rodders and performance enthusiasts. Among the list of products to be introduced will be a line of engine oils and additives that specifically address the zinc needs of flat-tappet cams.

Advice From The Experts

To address the subject of reduced anti-wear additives in motor oil, we presented the same questions to representatives of AmsOil, Pure Power!, and Torco. We chose these companies because all are well known and have loyal followings, and because of their product lines. AmsOil is entirely synthetic, Pure Power! is all mineral based, and Torco offers both, so it seemed like a good opportunity to find out how each addresses this issue.

What is the purpose of zinc additives?

AmsOil Zinc-based additives are used primarily as anti-wear agents to prevent premature wear of engine components. ZDDP is the most commonly utilized form, which also provides corrosion and oxidation protection.

Pure Power! Zinc is generally introduced to motor oil through its working partner, phosphorous; in tandem, they provide one hell of an anti-wear agent. It's, without question, the best we have, although there are some who claim XYZ polymer can perform the same task; however, it does not!

Torco Zinc dithiophosphate has been the chemistry of choice since the mid-'50s as the "anti-wear agent in high-performance oils." Zinc is better defined as an anti-weld agent because the surface asperities cannot connect or transfer in its presence. As the liquid oil transitions from a support separating fluid (hydrodynamic lubrication) to the touching or colliding asperity contact (boundary lubrication), the zinc instantly reacts and bonds, causing separation between the two moving surfaces. This is known as a chemical absorbed reaction layer, and the phosphorus counterpart to the zinc makes this possible. The phosphorus is the heat-seeking element that fluxes the zinc to the metal surfaces that are demanding protection from the metal-to-metal contact. The zinc dithiophosphate chemical is made from almost equal parts of zinc and phosphorus, or a 1:1 relationship.

Why were zinc levels lowered?

AmsOil Zinc levels were lowered in response to the American Petroleum Institute (API) SM and International Lubricants Standardization and Approval Committee

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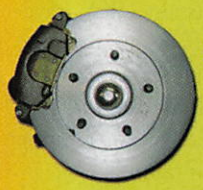

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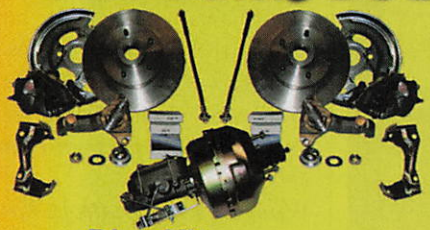

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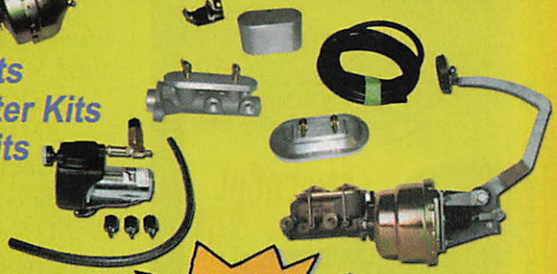

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(ILSAC) GF-4 oil specifications. The action was driven by original equipment manufacturers (OEM) based on the Environmental Protection Agency (EPA) mandate that emissions reduction systems needed to function for a specific period of time without failing. OEMs pushed to remove anything in motor oils that could potentially harm emissions reduction systems.

Pure Power! There are concerns that phosphorous/zinc may have a gradually crippling effect on catalytic converters, although there is no available data established that indicates how long it may take, nor how much oil consumption is involved to reach that point.

Torco Oil in the engine crankcase is constantly changing to vapors and is pulled by vacuum past the rings into the intake fuel air system. These vapors containing the element phosphorus contact the exhaust oxygen sensors and the catalytic converter. Because phosphorus is both heat-seeking and deposits residue at the same time, it changes the catalytic converter's ability to break down hydrocarbon fuel-type molecules, negatively affecting the oxygen sensors and catalytic converter operation.

What API designations have reduced zinc?

AmsOil There has been a stepwise reduction in sulfur and phosphorus in API oil specification designations, which drove the reduction in ZDDP content. The current API SM gasoline motor oil specification limits phosphorus to a maximum of 0.085 percent. Sulfur is limited to a maximum of 0.50 percent for 0W-20/0W-30/5W-20/5W-30 and 0.70 percent for 10W-30 viscosity categories.

Pure Power! Pretty much all licensed motor oils are affected, with commercial grades being the least, but the internal engine component wear will increase regardless of the amount of reduction.

Torco In the years previous to 1997, zinc levels between 1,200 and 1,400 ppm could be found in all brands of high-performance motor oils. In 2001, API category SL was introduced with 1,000 ppm maximum phosphorus/zinc content; this was a mandatory 18 percent reduction. In 2005, the API SM category was introduced and "phosphorus/zinc" level was reduced again to a maximum 800 ppm (an additional 20 percent reduction, total 34 percent reduction from API SJ rating); this reduces the phosphorus/zinc to an inadequate level of protection for high-performance engines.

What problems does reduced zinc create?

AmsOil Reduced zinc or ZDDP content has been linked to issues with premature wear in flat-tappet camshaft engines and, in particular, with engines that include high-tension valve springs or other modifications that create high contact pressures.

Pure Power! When the anti-wear agent is reduced, the rest of the additive pack receives a greater workload and engine wear will go up.

Torco When an engine transitions to WOT (wide-open throttle), elevated rpm, or when the applied load goes up, the oil film "goes down"; this situation can cause a potentially dangerous metal-to-metal contact issue. Increasing the oil viscosity grade will help with deeper, stronger films; today's engines (post 2001) are built to use lower-viscosity and lower-phosphorus/zinc–rated oils. The way in which these new engines are built and the lower demands on components such as valvetrains and cams is such that the requirement for zinc protection is not the same as in previous years. Engines produced before 2001 are put in jeopardy from reduced phosphorus/zinc content.

Are there other additives that provide the same protection as zinc?

AmsOil AmsOil markets and sells motor oils that contain additive packages that replace a portion of the ZDDP component. AmsOil also offers the Premium Protection line of motor oils that have higher levels of ZDDP.

Pure Power! Not really, especially where cam/lifters pushrod tips and wrist pins are concerned.

Torco Torco USA started using another metal supplement to zinc in 1972; it was found that engine wear would be greatly reduced if organic liquid molybdenum was added to zinc and phosphorus. Through the years, Torco has adjusted the combination of zinc, phosphorus, and liquid moly, but

Torco MPZ is the secret formula/ingredient for all Torco products.

Do you recommend specific break-in additives for high-performance engines?

AmsOil AmsOil does not currently provide any break-in additives. The use of an additive during the break-in period (as opposed to an ongoing treatment) is only advisable in conjunction with a high-quality lubricant for flat-tappet cams. The break-in period is when flat-tappet camshafts are most vulnerable to failure. We also recommend that street rodders use a high-quality assembly lubricant. (Talk to the manufacturer of your camshaft engine.)

Pure Power! Not really, especially where cam/lifters pushrod tips and wrist pins are concerned. I have built and raced cars for 45 years—everything from Super Stocks to Fuel Altereds—and it is my experience that a good commercial-grade 10W/30 or 15W/40 motor oil will handle the break-in/seating chore quite satisfactorily.

Torco Engine break-in and good standards and procedures are critical to the life of a high-performance engine. This process should include assembly lube products for bearings and bottom-end in liquid form; a "gel" version of the assembly lube should be used for cam lobes and pump drives. A mineral-based break-in oil will add protection and allow for piston rings to seat. This is a critical step when planning to switch to synthetic oil after break-in. We offer a break-in additive with high levels of anti-wear and anti-friction MPZ for added protection.

Do you recommend any oil additives for normal operation?

AmsOil AmsOil does not recommend using any oil additives, since there is no need to consider use of any oil if the motor oil is formulated correctly for the application. Oil additives focused on extreme pressure or anti-wear resistance may appear to initially help with these particular properties but upset the balance in other areas and can promote acidic corrosion, excessive oxidation, and foam, for example.

Pure Power! This is an area where so many people are led astray. There are companies that tout their oil additive as being

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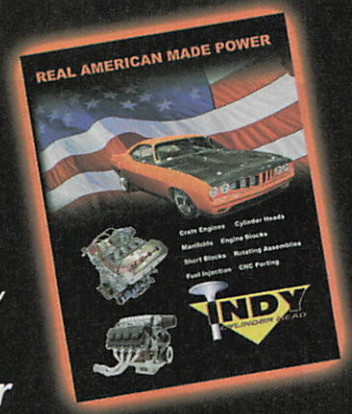

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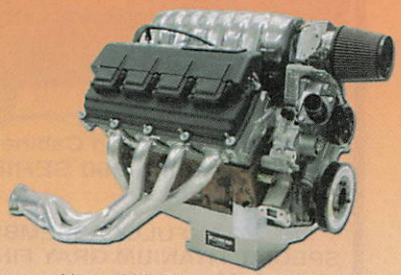

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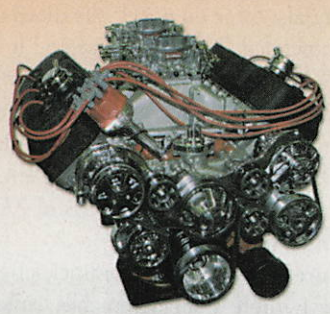

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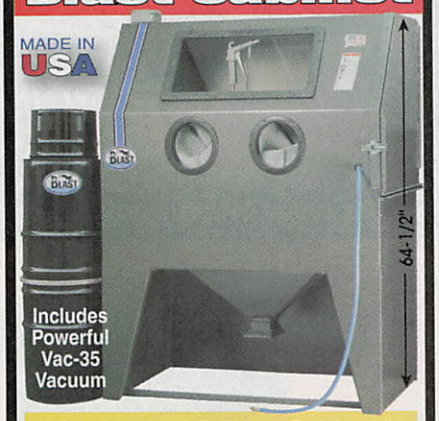

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fundamentally urgent for all cars, trucks, motorcycles, airplanes, boats, etc. I would not recommend any oil additive for any reason, especially the thick/liquid plastic variety that claim to afford so much engine protection by adding one or two bottles to the engine oil. Those are especially deadly because they will actually interfere with ring sealing as well as being acidic.

Torco For the high-performance, racing, and hot rod market, we recommend adding a zinc-enhanced additive such as Torco ZEP. This additive alone has the appropriate amount of zinc and phosphorus, along with molybdenum for additional protection to bring up to six quarts of API SM motor oil to 1,200-ppm zinc/phosphorus content.

Many engine builders recommend the use of diesel oil in vintage/flat-tappet engines. Is that a viable option?

AmsOil The assumption is that diesel oils contain high levels of ZDDP, which cannot be found in other motor oils. This recommendation is partially correct. First, make sure the diesel oil carries gasoline credentials; some do not. If the diesel oil is recommended for gasoline use and it contains a healthy dose of ZDDP, it may be a viable option. Be very careful not to generalize that all diesel oils contain high levels of ZDDP; this is not the case. Modern API CJ-4 type oils have lower levels of ZDDP than their predecessors.

Pure Power! Any commercial-grade motor is more than acceptable, either in 10W/30 or 15W/40. Over the road, tractors pulling two or three times their weight go as far as two million miles using diesel/commercial-grade motor oil, so it can handle anything you throw at it—including nitro-burning Top Fuel cars.

Torco Diesel engine oils do contain higher levels of zinc than API SL and SM automobile oils, while diesel oil provides essential zinc/phosphorus levels. Unfortunately, diesel oils also add significant levels of detergents and potential "non-compatible" elements to the mix. Diesel engine oils have to be made to deal with heavy sculpture fuels and engines in a wide variety of climatic conditions. Race oil formulations can be adjusted to best suit extreme temperature and loads not necessarily addressed in a diesel engine application. Using race oil will provide an acceptable level of zinc/phosphorus to provide acceptable anti-wear protection.

Are racing oils subject to lowered zinc levels?

AmsOil The low phosphorus levels as required by API SM apply only to 0W-20 through 10W-30 viscosity ranges. Racing oils are typically higher viscosity and anything above a 30 weight is not required to have low levels of phosphorus, even if it is API SM. Most racing oils are expected to contain high levels of anti-wear protection since durability is their main purpose. AmsOil racing oils contain high levels of ZDDP.

Pure Power! In the past 20 odd years, we have had occasions to have ICP analysis performed on three "racing" motor oils. The additive package that was being employed in those oils was really pretty weak. In fact, one of the oils actually had more working ingredients in the regular motor oil version than in the "race formula" motor oil.

Torco A product listed as race oil is exempt from the API ratings issue; these products are *not* recommended for vehicles with catalytic converters. Torco SR-5, TR-1, and SR-1 race oils are exempt from API ratings and all contain levels in excess of 1,200 ppm zinc/phosphorus.

Are racing oils a good option for street-driven performance engines?

AmsOil That is dependent on the brand and formulation. Racing oils designed exclusively for the track many times do not contain appropriate levels of detergents and dispersants required for longer-term street use. These formulations would not provide adequate protection against engine sludge, rust, oxidation, and attack from acids and other combustion byproducts. The best advice is to talk with a reputable manufacturer, ask informed questions, and make decisions based on the actual specifications.

Pure Power! Based on my experience, I would not recommend an off-the-shelf race oil. I would much prefer a commercial/diesel motor oil.

Torco As discussed in the previous questions, the issue is engines pre-/post-2001; if

there is no catalytic converter, then "race oil" can be used, which means increased levels of zinc/phosphorus.

Do higher viscosities provide any better protection in oils with lowered zinc levels?

AmsOil Higher-viscosity oils may help somewhat with extra protection, but a strong anti-wear package is required to protect your investment with regards to flat-tappet camshaft engine applications, especially with modifications, including high tension valve springs.

Pure Power! No, they do, however, lead to more cylinder blow-by/cylinder leakage, not to mention greater fuel consumption.

Torco Higher-viscosity oils provide deeper/stronger films with more hydrodynamic contribution than lower-viscosity oils. If an engine is a large displacement, like what is found during the musclecar era, a SAE 20w50 is usually recommended.

Which of your oils would you recommend for flat-tappet engines, particularly older high-performance engines with higher-than-stock valve spring pressures?

AmsOil The AmsOil Premium Protection 10W-40 (AMO) and 20W-50 (ARO), and racing oil 20W-50 (TRO) are higher-viscosity oils that contain high levels of phosphorus and zinc anti-wear additives. AmsOil diesel oils, 5W-30 (HDD) and 10W-30 (ACD, are lower-viscosity products qualified for gasoline engines that also contain high levels of ZDDP anti-wear additives.

Pure Power! Our 10W/30 CH-4/SJ or 15W/40 CI-4/SL high TBN reserve can quite easily handle seat pressures in excess of 225 lbs.

Torco All Torco race oils—both mineral and synthetic; TR-1, SR-1, and SR-5—are designed for the most severe race and high-performance engines.

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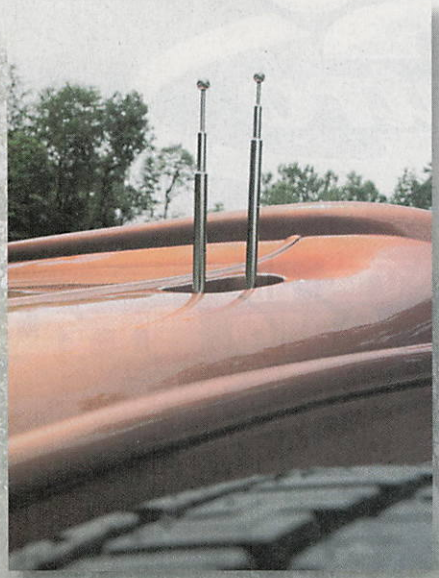

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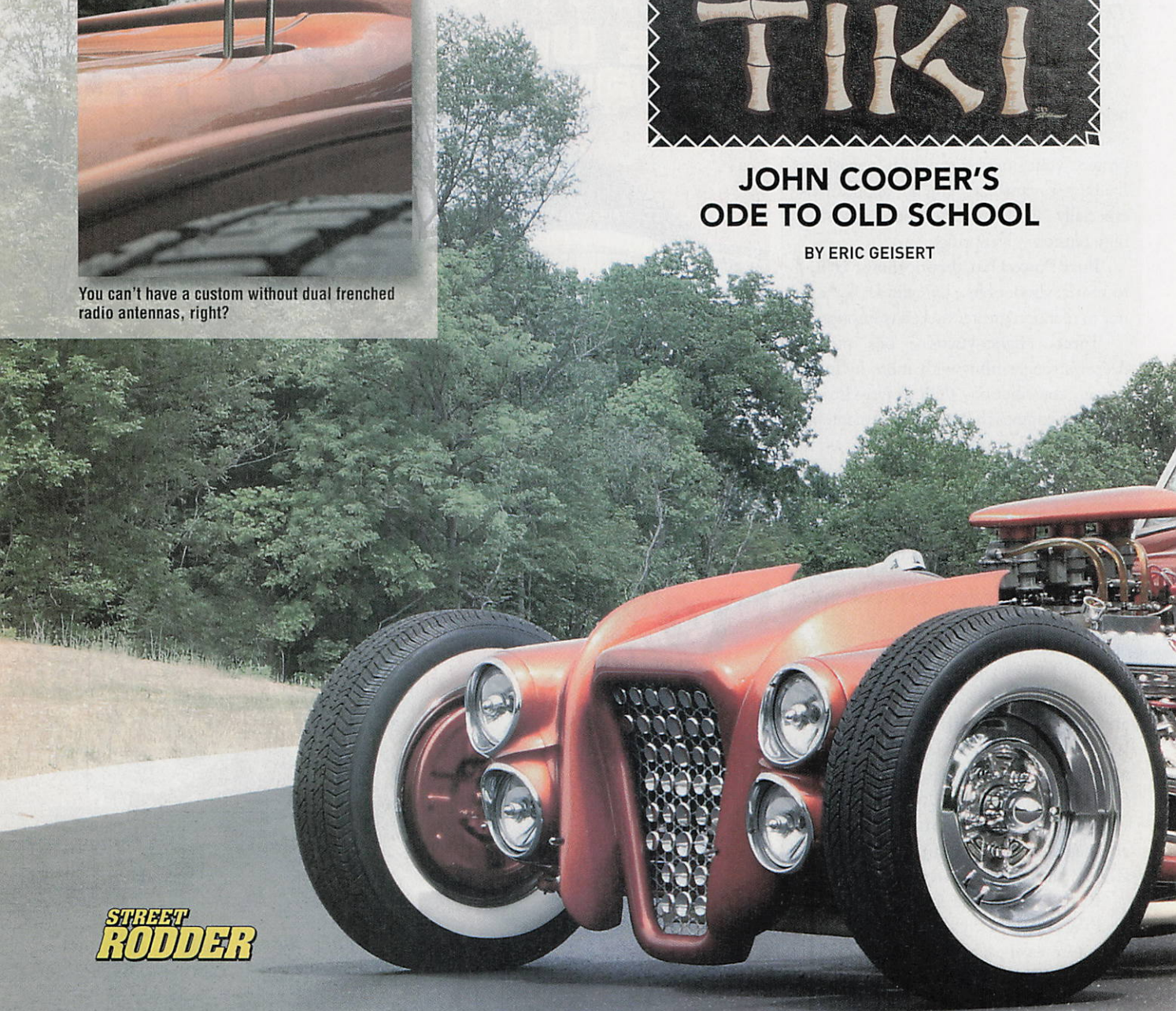
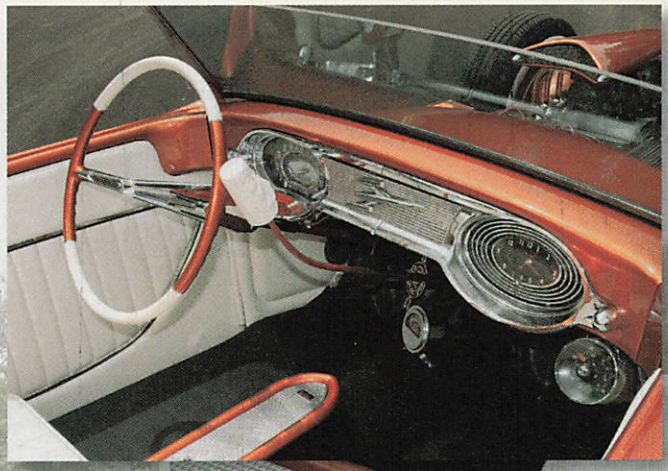


STREET RODDER

You'd have to be something of a visionary to be able to look at a stack of mismatched parts and think there could be a car in there somewhere, but that's the type of guy Tom Culbertson is. Tom, working out of his Culbertson's Rod and Custom shop in Indianapolis, Indiana, isn't a Johnny-come-lately to the hot rodding scene—he's lived and breathed it from the days when he used to match race against the Little Red Wagon back in the '60s with his own wheelstander.

You might say time has stood still for Tom. He doesn't own a cell phone (or even a push-button one—he uses a rotary dial phone), doesn't have a Web site, and believes fuel injection is the work of communists! The slick-back hair, tattoos, and cuffed jeans with engineer boots he wears today are part of the style of dress he's always worn (well before any of them were cool), and he used to race midgets and in NASCAR decades before the sport went corporate.

So, now knowing his background, what kind of cars would you expect Tom to build? One thing is for sure: They look traditional because they *are* traditional. But the latest ride to come from Tom was partially guided by the parts he had on hand at the time. Behind the shop was an



Ed Morley from Ed's BeBop Shop used a white Naugahyde and a roll 'n' pleat design in his creation of the bucket seats for the *El Tiki*. The center console houses a '55 DeSoto ashtray, a '59 Olds ignition switch, and a '56 Olds headlight switch, all mounted to a piece of extruded aluminum that was found in the back of a '60 Cadillac ambulance. The steering wheel came from a '59 Olds, while the dash came from a '56 Olds, but cut down to fit the '29. A tachometer is mounted to the tunnel (the tach-looking item at the right of the dash is actually a Sanyo Tachrad AM/FM radio) with the rod's wiring handled by American Wiring.

original '29 Ford sports coupe body, but someone had once tried to add a five-window roof to it, though not very well. Warped and damaged, the body was better off as a roadster, and the idea of an early '60s show car was born.

Tom was able to take the pile of parts he'd collected only after years of doing so and, in 127 days, get 90 percent of the car finished (try doing that, you TV-based hot rod builders!). John Cooper, from Avon, Indiana, knows Tom and the work he does, and he would visit him at his shop nearly every day of the build, offering his opinion of what the car needed. What John didn't know was he would own the car near the end of the buildup and be responsible for the final prep and paint.

Starting from the ground up, Tom decided to fabricate a tube chassis that looks like it might be at home under a Funny Car. The double-tube frame was set up on a 115-inch wheelbase before a Ford 9-inch rear went in, attached by a pair of friction shocks, a pair of Ford wishbones, and a set of quarter-elliptic springs. The front suspension uses a '47 Lincoln axle, split 'bones, a stock spring, and a rare set of Roto-Flow shocks (used on '50s-era English cars). Drum brakes are installed on each corner, as are 15x7-inch chrome

Everybody has to start somewhere, and, in John Cooper's case, somewhere is this '29 Ford sports coupe that had been converted (badly) into a five-window. Warped and ill fitting, the top was destined to come off and to be made into a roadster.

Mocked up on its tube frame, the El Tiki is coming together in this photo. Most of the build took only 127 days (something those car builders on TV just can't seem to figure out how to do!). The doors on a coupe are 7 inches longer than on a stock roadster, which really helps accentuate this car's long lines.

reverse wheels (the rears complete with screw holes for once-mounted slicks) and the double-sided whitewalls.

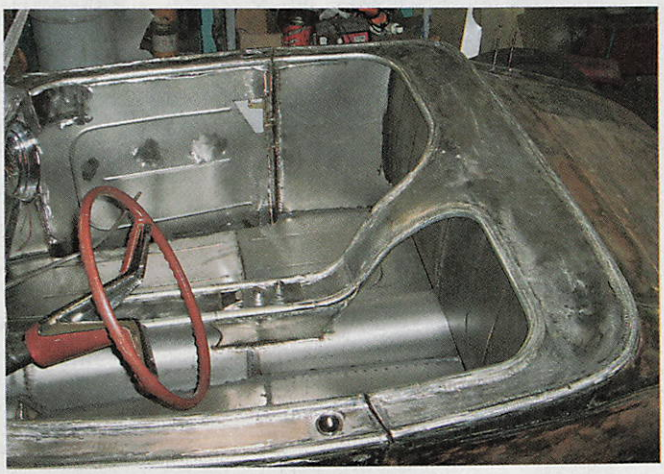
Not wanting parts on the car if they were made much past 1962, Tom used an old Hurst cradle engine mount to hold the '56 Olds V-8 in place. He got the motor through customizer Joe Bailon, who he had visited in 2002 after attending the Grand National Roadster Show. He brought the motor back to his shop, went through it, and installed it with a rare conversion kit that places the starter on the passenger side of the block rather than the driver side, which allowed for better routing of the exhaust and steering components.

The 324 is topped with a trio of carbs atop an Edelbrock manifold and, as John claims, works great due to the small 160-cfm capabilities of each carb. The air cleaner is a custom, hand-fabricated unit, and the chrome valve covers are vintage steel items stamped for high-lift rockers. Internally the V-8 runs an Isky cam while exhaust runs through headers that were fab'd by using pieces of roll bar and tapered megaphones. The whole shebang mates to a '47 Ford truck three-speed (via an aluminum adapter), and the long shift handle (topped with a Tiki head) was bent to clear the dash of the car.

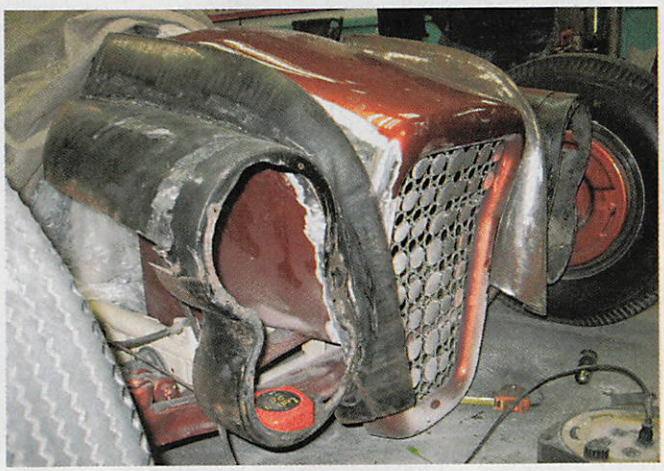
You might not think there was much done to the steel body of this fenderless roadster at first glance, but you'd be wrong. More than 50 body mods have been completed, starting with the removal of the five-window roof and its sports coupe door tops. The roadster sits the way it does due to a 4-inch channel, and it completely covers the twin-tube chassis except for the area under the headers. Model A coupes feature doors that are longer (by 7 inches) than those found on same-year roadsters (and longer decklids, too) and the door tops were capped and rounded off before bear-claw latches from a '58 Scotty travel trailer could be added.

The door tops extend around the cockpit and then waterfall into the cockpit and above the driveshaft tunnel. Other custom tricks were employed on the exterior, too, including the frenching of the dual radio antennas as well as with the license plate. To clear the rear wishbones, the wheelwells were moved inward, and '60 Dodge taillights were frenched into the rear apron.

The grille, probably the most impressive section of the vehicle, was a conglomeration of many parts and pieces. After seeing a Keith Weesner illustration (titled "Winner's Circle") and inspired by cars such as the *Emperor*, the *Ala Kart*, and "Chili" Catallo's coupe (the *Lil' Deuce Coupe* of Beach Boys fame), Tom



The waterfall console in the cockpit of John's custom is pretty straightforward. The tops of the doors were capped off, and you push down on the old dresser knob in the top of the door to actuate the bear-claw latch.



Several parts and pieces were used to create the unique grille. The headlight section was taken from the first 16 inches of a '60 Buick front fender. Buckets from a '36 Dodge were then added and the assembly canted for a look found on early customs, such as the *Emperor* or *Ala Kart* show cars.

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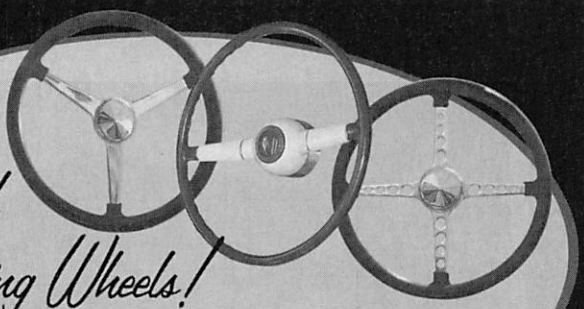

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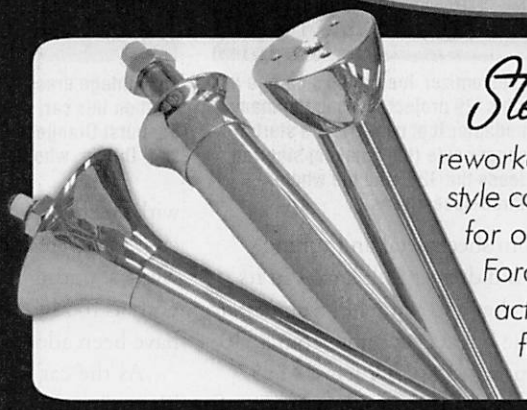

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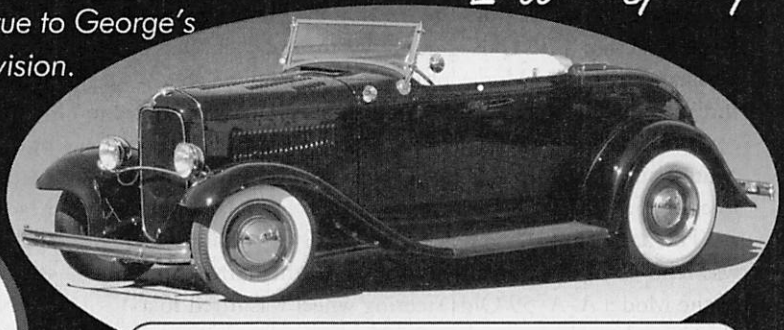

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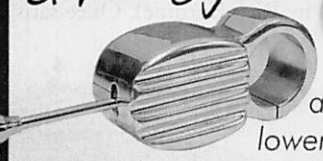

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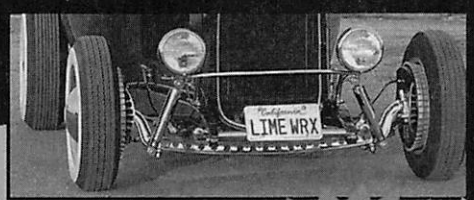

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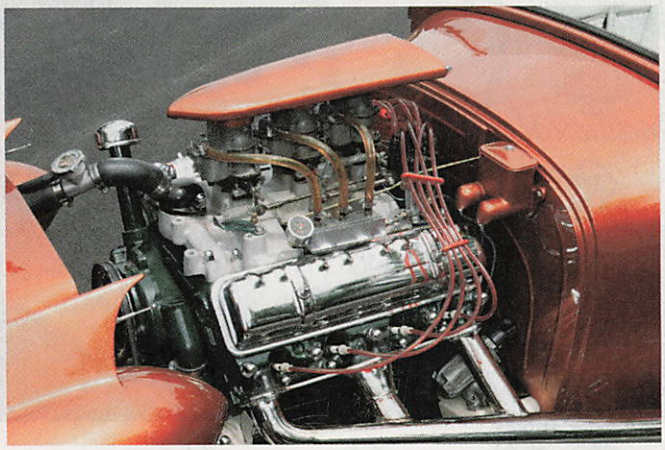
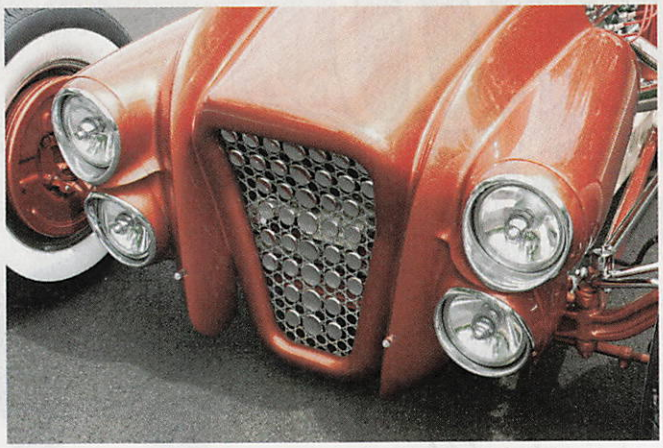


Rod builder Tom Culbertson stopped by customizer Joe Bailon's garage in 2002 and picked up this '56 Olds V-8 for his '29 project. Among the many cool parts on this setup is an aluminum adapter that converts the starter location from the driver side to the passenger side (thus making steering and exhaust routing easier). Tri-power feeds the 324, and the whole assembly is backed to a '47 Ford truck three-speed trans.



The vintage dresser knobs mounted in the mesh from a '58 Ford looks right on this car, as do the canted quad headlamps. That's a PPG 2006 GM Sunburst Orange with a TranstarEuro Clear applied by John's 17-year-old son, Dustin, who painted the car in his high school shop class.

made the grille's center section from sheetmetal and tubing, with mesh from a '58 Ford grille and dresser pull knobs in its center. The headlight section uses the first 16 inches from a pair of '60 Buick front fenders, with the buckets coming from a '36 Dodge. You'll see an acrylic tube protruding that has a #1157 bulb at the other end if you look closely at the lower portion of the fin between the headlights and the grille. They're the turn and parking lights—kind of an early version of fiber optics!

For the interior, the waterfall is used to separate the twin bucket seats and ends as a center console that houses a '55 DeSoto ashtray, a '59 Olds ignition switch, and a '56 Olds headlight switch. Ed Morley of Ed's BeBop Shop in Paoli, Indiana, took measurements at Tom's shop of what was needed to cover the roadster's innards and came back with enough pleated white Naugahyde to do the job. Stainless door trim from the interior of a '57 Chrysler was added to dress up the door panels.

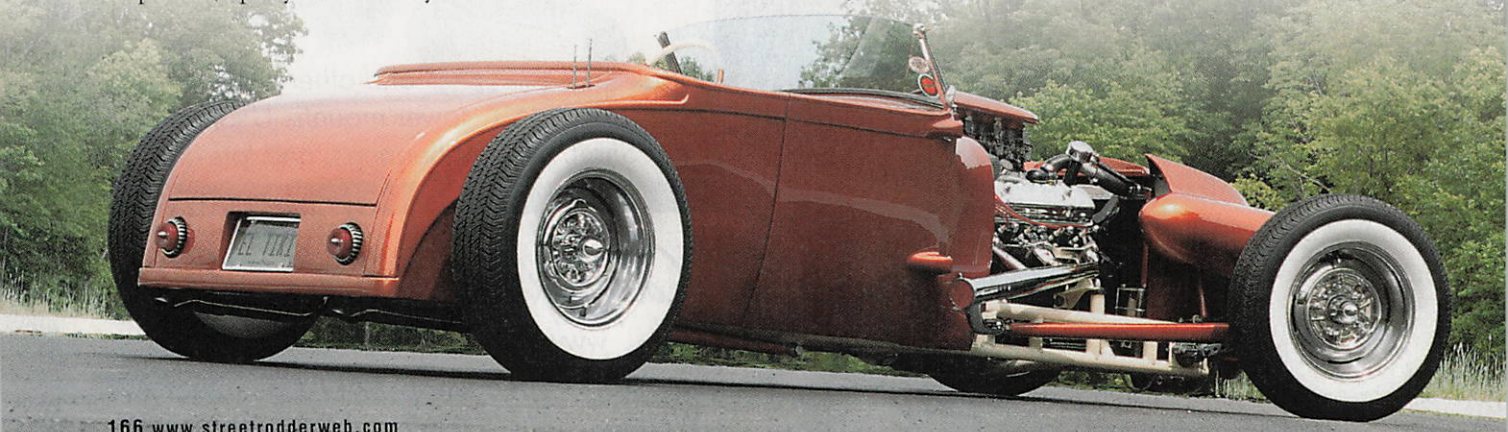
The dash started life as a too-wide '56 Olds unit, which was relieved of its radio and ashtray to fit the narrow confines of the Model A. A '59 Olds steering wheel was fitted to a chrome tube column, and an 8,000-rpm tach mounted on the tunnel (near the aluminum Rajo Speed Power gas pedal) lets the driver know when he's exceeded his limit in engine revs.

When he was only 17 years old, John's son, Dustin, and his friend Clark McCardle got the job to do the bodywork on the roadster, which was done in their high school's paint and body shop class (capably instructed by Rick Burdine). Once satisfied with the bodywork, Dustin (referred to as Von Dust in some circles) covered the car with PPG 2006 GM Sunburst Orange while shooting the chassis with a cream-yellow hue. While the body is (oddly) void of pinstriping, some graphic highlights have been added in a forest green to the chassis and engine.

As the car neared completion, Tom asked John if he would like to buy it from him, and John obliged after selling a '60 Caddy to do so. Now a source of conversation at every car show it attends, John is happy to talk to smiling onlookers and the few folks who swear they saw his ride at some old Autorama show in the '60s. John remembers reading about those old cars, and still can't believe he and his wife, Susie, actually get to drive theirs around Indiana.

Most folks might be happy with the way the car turned out, but the next phase of work has already started on John's roadster. Since these photos were taken, a pair of floating headrests have been fab'd to match the air cleaner, and they will be mounted behind each seat and about 3 inches above the edge of the cockpit.

New taillights are planned, too, and red Lucite rocket-shaped canisters off a pair of '50s-era manual crank ice crushers. All of the engine parts, except the block and heads, are off to the chrome shop, and the block will be painted an Oldsmobile gold. The final item is the steering wheel, which is off to be pearlized. Hey, most hot rodders will say their cars are never finished, so why would John Cooper's *El Tiki* be any different? SR



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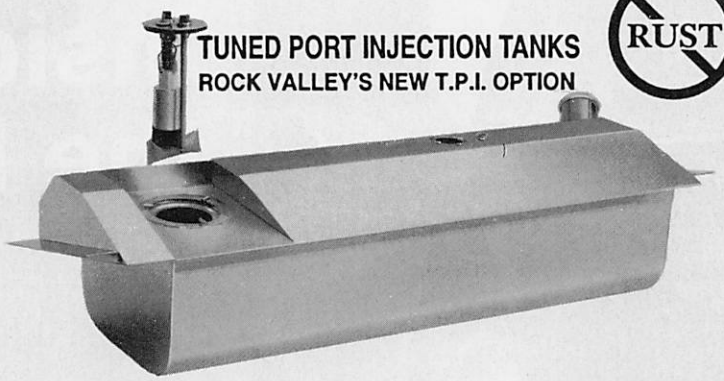

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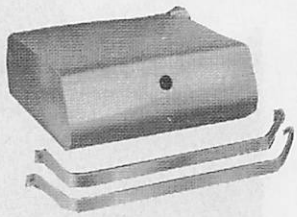

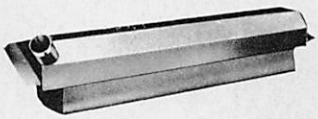

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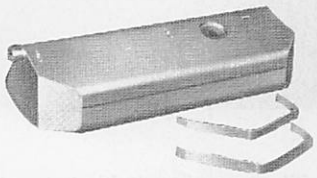

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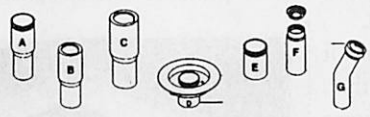
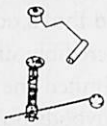
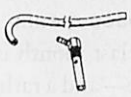


SENDERS



BALL CHECK



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BY CHRIS SHELTON | PHOTOGRAPHY BY FRANK WALLIC AND MATT LESKY

Thinking Inside the Box

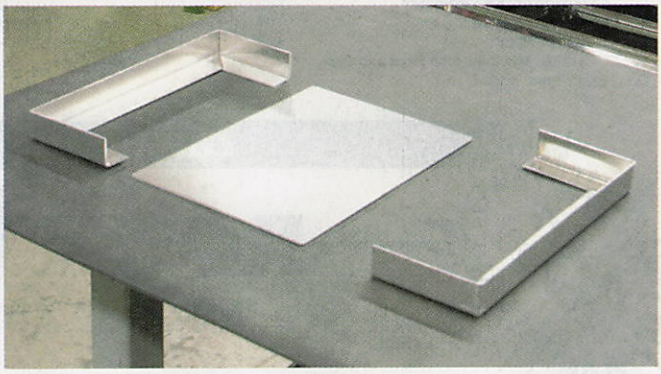
a battery box for all reasons

A number of months ago, we illustrated how Frank Wallic fabricated replicas of aircraft seats. Little did we know that the story would prove so popular—so popular, in fact, that the story begat a miniseries of sorts. Suddenly people were interested in what it took to fabricate parts by mid-century aerospace means. And that's cool.

While the dash face story last month is incredibly simple, it lends itself to a specific purpose—and a rather limited one at that. A battery box, on the other hand, is useful for anybody building a car. A basic and straightforward design made with simple shapes and tools, this project is definitely achievable for a first-timer.

At the same time, we're going to illustrate the seat risers for Editor Brennan's up-and-coming squeeze. While fabricated by Frank, their existence is due to his collaboration with the place building the car: Ionia Hot Rod Shop. We included them for two reasons: primarily to give you ideas and most importantly to illustrate how a seat—including a flat-bottomed aircraft bucket—should fit within a car to make driving a comfortable experience.

Since we're basically illustrating the rudiments of aircraft-style sheetmetal fabrication, we took it upon ourselves to offer a few basic pointers. The first: tools. Seeing how Frank makes quite a few of these pieces, expensive tools like some of the ones he uses are good investments. The rest of us hobbyists who want to merely test the waters, however, can get away with simpler, more rudimentary tools. Take the rivet squeezer like the one he uses here. It's handy for sure, but at about $450 it's expensive; since it operates near open edges exclusively, it's



The fundamental elements of the battery box include the floor and the frame. The frame is little more than two strips of 14-gauge aluminum sheet, brake-bent 90 degrees. To get the straight strips to form the C-shape, Frank cut 90-degree wedges from the base flange at each corners and simply bent the wall flange to close the wedges. The floor, in case you're wondering, is flat and fits within the base frame.

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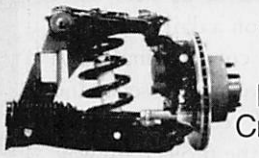

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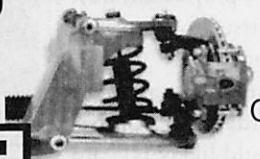

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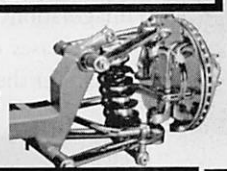

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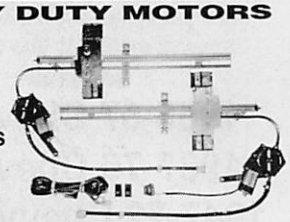

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limited, too. The rest of us who don't plan to smash rivets on a daily basis can make do with the conventional (and more affordable) rivet gun, sets, and bucking bars—stuff required to buck rivets for the rest of the project anyway. Reference the July '07 issue for information regarding those tools.

While his JET-brand box-and-pan brake is relatively affordable, it's probably too spendy and would likely take up too much space for the occasional user. Several tool vendors such as Eastwood Tool Co. offer economical and compact brakes, and while sort of clumsy and not necessarily pro quality, we've seen imported 18-inch sheetmetal brakes for less than 30 bucks; 30-inch models run about $70. Learn to work around their limitations, and projects like these are definitely tenable. If you're really frugal and creative, consider clamping sheets between 2x4s or angle iron and folding your edges with a body hammer. Don't laugh; bodies for what are now million-dollar cars were frequently made as recently as half a century ago by hammering sheets into hollowed-out logs.

Then there's the professional element. I know people who may be capable enough to do this work, but who are far better at making money than parts. If you're one of them, consider having Frank make you some of these parts. After all, the primary purpose of these stories was to illustrate the things he made; in doing so, we stumbled into a tech story or two. Or four. …

As you can well imagine, the only limitation to these projects is either your imagination or your pocket book (or, in the cases of most of us editors, both). Whatever the case, give this a try. SR

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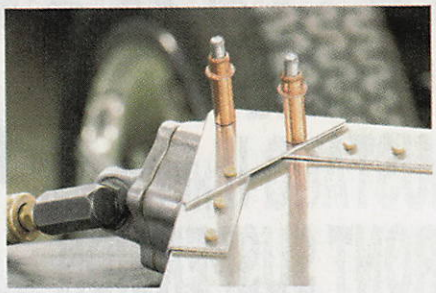
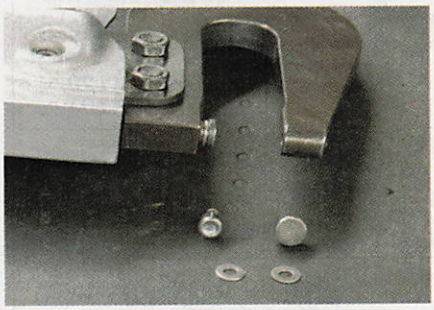
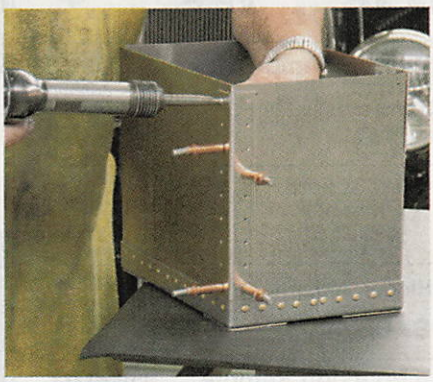


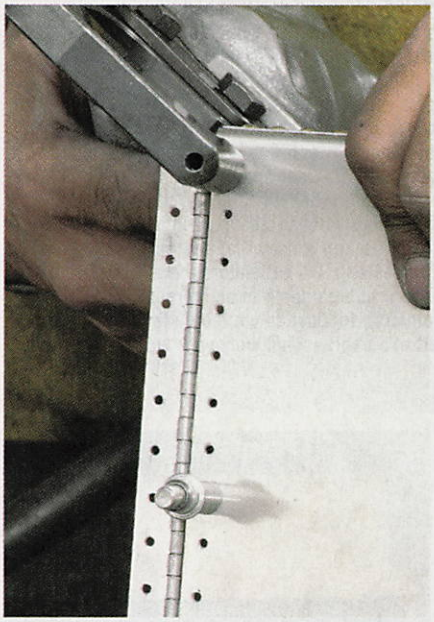
Once assembled, the frame base and the floor comprise a tray of sorts. The triangular gussets strengthen the corners and hide the pie cuts. Note the presence of the temporary sheetmetal fasteners. Typically referred to by Cleco or KwikLok, their trademark names, they're essential to sheetmetal fabrication, as they can be installed or removed in seconds. At 43 cents a shot for the fasteners and about $5 for the pliers at Aircraft Spruce, they're one of the best investments you'll make if you plan to work with sheetmetal.



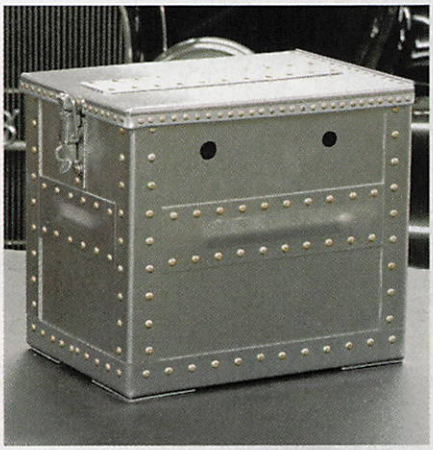
Remember the pneumatic rivet squeezer we mentioned earlier? Well here's the business end of the one Frank uses. Their one-hand operation suits them for squeezing rivets, provided they're within an inch or so from the edge of a panel as they are here. The tool's replaceable rivet sets form perfect heads, whether rounded for conventional or flat for flush-mounted rivets. The washers next to the rivet set determine the amount the squeezer will compress the rivet. From $600 to $700, the pneumatic tools from Aircraft Spruce may not be justifiable; however, the company also offers a hand-operated Tatco squeezer for about $130.



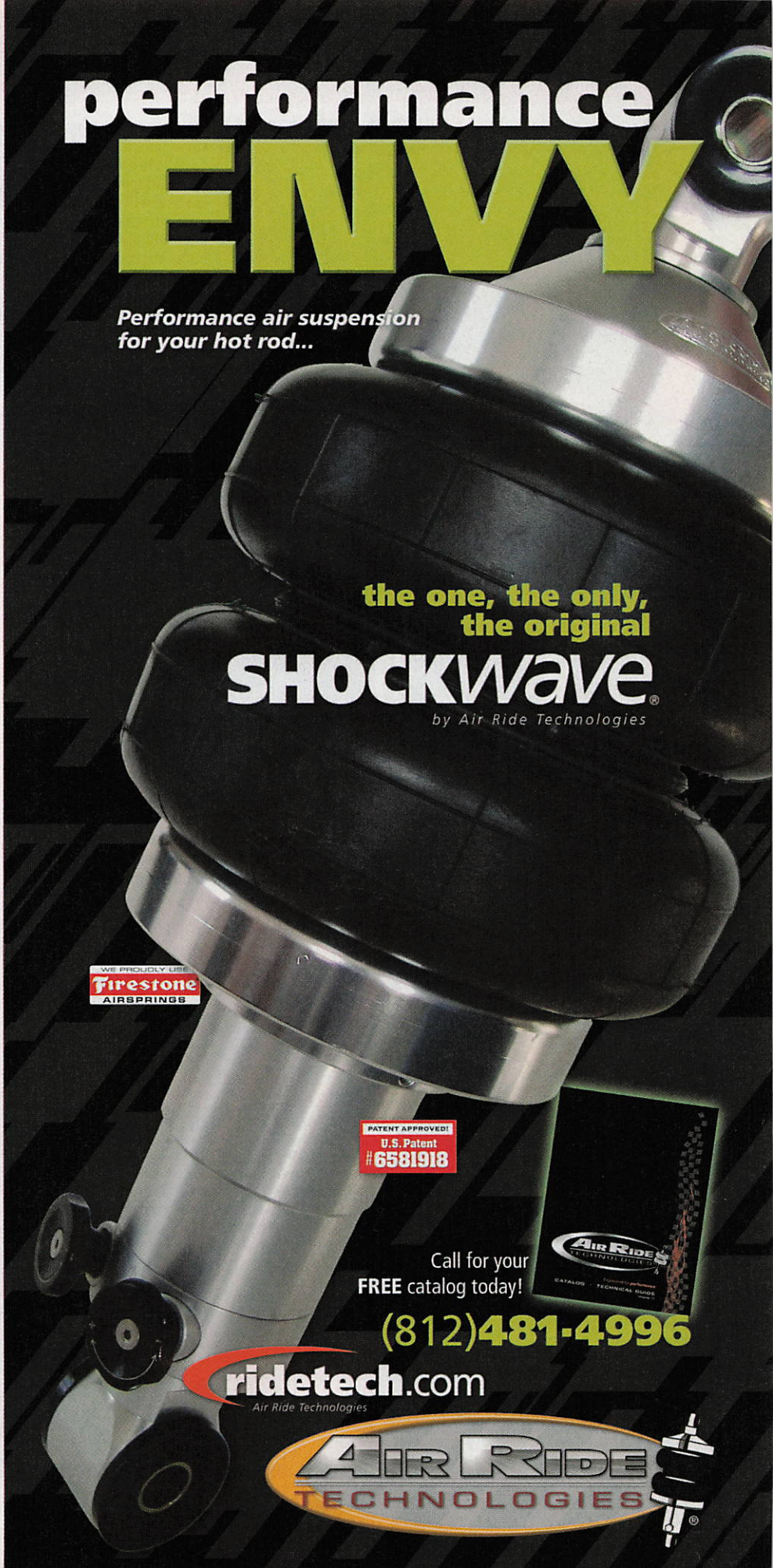
Once Frank finished the base, he made the walls with more of the folded and flat sheet. For most rivets—exclusively for those in the middle of a panel—Frank uses his trusty rivet gun, a rivet set, and a bucking bar, as shown here.

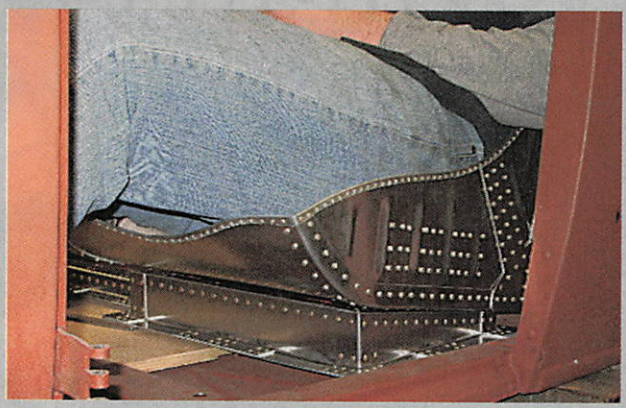


In keeping with the requirements of a true battery box, Frank fabricated a lid. While we don't have photos of its construction, we can best describe it as a flat panel with a perimeter flange on three sides. He made that by notching two corners and folding over both of the long sides and one short side by about 3/4-inch. He finished the folded sides by folding a strip of aluminum over the edges and riveting it in place. Riveted to the unfolded fourth side is an aluminum piano-style hinge. While it's optional, he's using his rivet squeezer.



While the doubler plates on the sides and top lend a bit of rigidity to the structure, they're there primarily to lend the box a bit more of authenticity. Frank made them by rolling a soft bead into strips of metal. When finished with an over-center cowl latch, commonly referred to as a cabinet latch or draw clamp, these boxes are just as functional as they are handsome. Make sure to use appropriate grommets to protect the cables. If not, this box will very effectively chafe cables; being aluminum, electricity will find the box a very efficient conductor.





We're sort of getting ahead of ourselves by showing a finished riser, but at the same time this is the perfect opportunity to illustrate what a seat riser must do. Above and beyond raising a seat from a floor, the riser must pitch the seat rearward to a slight degree. By pitching the seat rearward, the leading edge of the seat will more effectively support your thighs. Without this thigh support, your legs will splay outward and stress your hip joints. Most importantly, the rearward pitch will distribute your body weight over a greater area of the seat—specifically to the seat back. If the seat sits parallel to the floor and the seat back perpendicular, your butt will bear the brunt of your entire body weight. No matter how big you may be across the beam, your tuchus simply doesn't have enough surface area to handle your body weight, and trust us when we say that no amount of springs or padding will prevent it from falling asleep. Do not underestimate this property; improper seat geometry can make your butt go numb in an incredibly short time and a numb butt is incredibly uncomfortable. Just do yourself a favor and pitch your seat back a few degrees. Start at 5 degrees and work your way back until the seat gets comfortable.

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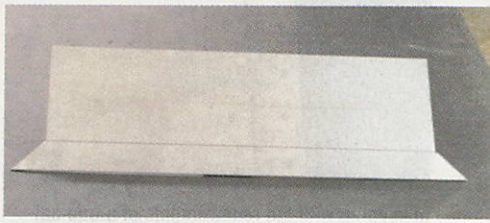
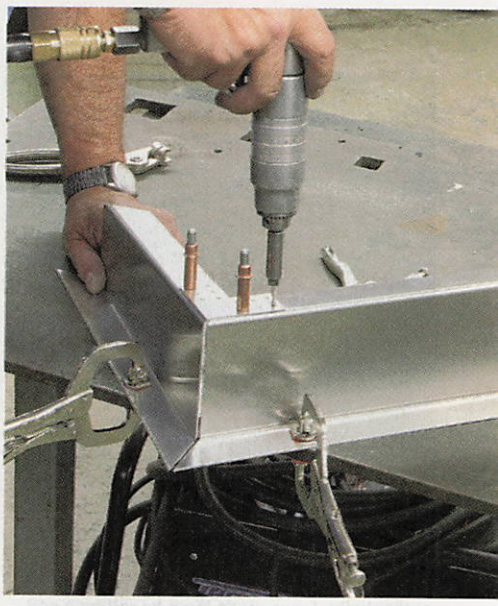


While each panel's shape will differ to accommodate the riser's taper, each panel starts out looking similar to this one, a panel with an upper and lower flange, as identified by the lines. The flange with the sharp "ears" protruding will get folded outward to create the base; the notched flange will get folded inward to create the seat mount. The space between the flanges dictates the riser's height and/or taper. Always establish the minimum area your bender needs when establishing your riser height and/or angle.



Each base flange and both of the upper flanges on the side panels can be bent to a simple 90-degree angle. The upper flanges on the front and rear panels conform to the riser's taper; however, they must be bent to a corresponding angle. For example, if the riser pitches the seat rearward by 5 degrees, the upper flange on the front panel must be bent to 85 degrees; the upper flange on the rear panel, 95 degrees.

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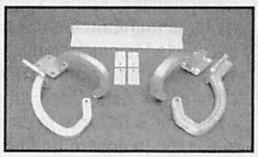

Truck hinges now available in steel or aluminum - machined from steel or aluminum plate, not cast. The steel hinges are unique as they have no visible welds. Aluminum hinges have a ball mill design and a satin finish. Hinges can be purchased separately or as a complete kit with a 40" mounting bar with hardware.

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Our kits offer the following quality features

Stainless lock pin
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Spring tension when locked
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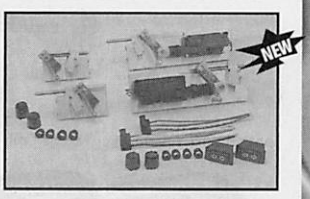
Trim bushings included for both door and door post
CNC machined alum housings
Built in micro switch for light or beeper door not lock alert

NSRA BEST SAFETY PRODUCT 1999



Manual Kits (NSRA Best New Product 1988) ..... $59.95 pair
Electric Door Lock Kits (for locking cars from the outside with remotes)... $89.95 pair
Remote control kit to operate these kits $89.95
Electric Suicide Door Safety Pin Kit (for securing suicide doors) (includes inside switches and wing pigtails)..... $104.95 pair
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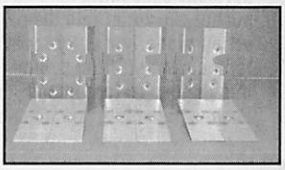
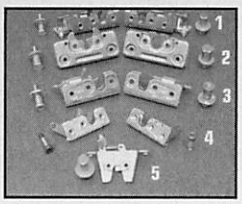
Latch Install Kit



Installing latches is now a snap. Kit includes door section mounting plates and striker bolt floating nut plates and stainless latch screws. Latch plates feature die stamped screw head bosses to recess the screws for more clearance. Compare to cheaper non stamped kits. Kits available for large, small and locking latches.

Kit for 2 doors..... $55.00
Kit when purchased with latches..... $50.00
Kit when purchased with hinge and latch combo..... $45.00



Double Catch Latches

Large and Small Standard Latches (2 and 3).....$45.00 pair
Locking Latches (1).....$69.95 pair
Mini Latches (4).....$17.00 each
Trunk Latches (5).....$25.00 each
Stainless Strikers 1/2, 9/16, 11/16 sizes avail .....$17.50 each

Hinge and Latch Combos

Deluxe Hinge Kit and Pair of Latches **$369.00**
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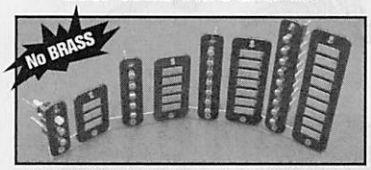

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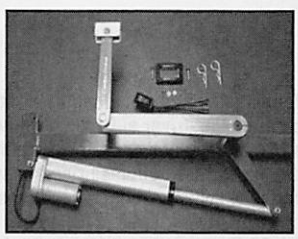

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100# Lift (for average trunks) **$319.95**
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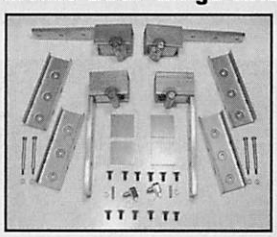

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16 years of hinge manufacturing, our expert and always available tech help, if needed, and our exclusive lifetime warranty has resulted in the strongest, most easy to install and best value kits on the market today. Just ask the rodder who has one. So revolutionary, they won the NSRA Best New Product Award (1990).

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Remember, hinges are part of the structural strength of your car, why settle for less? Don't confuse these with other hinges on the market - There is a difference! There are plenty of imitations, but only one Carolina Custom.

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These kits make it easier to install door handles when using bearjaw latches. Inside kits are available for either Ford and Mopar Square shank or GM spline shaft. Outside kits are for square shank handles. All kits are springloaded to return handles to original position and come with connecting rods.

Inside Handle Kit (specify square or spline)....$55.00 (2 doors)
Outside Handle Kit..... $55.00 (2 doors)

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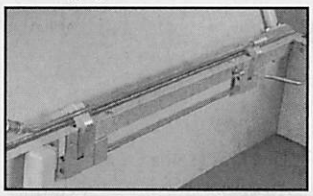

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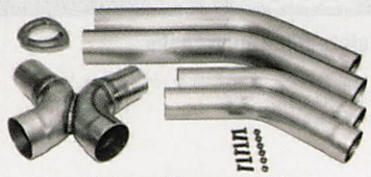
Universal Crossover Kits

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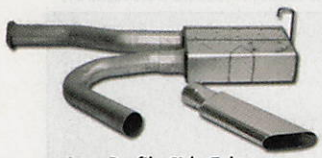
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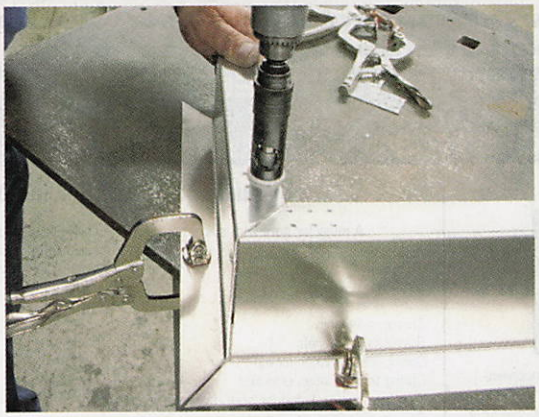
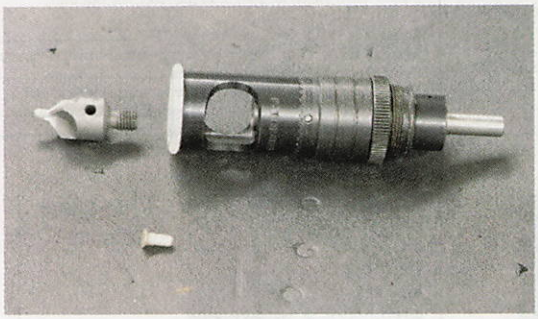
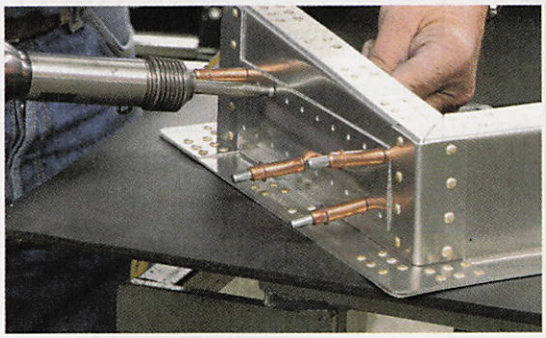


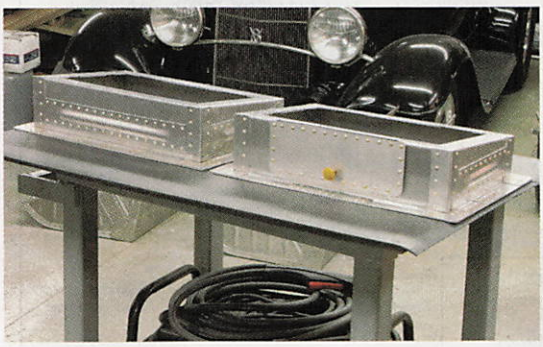
To hold each flange to the other, he fabricated L-shaped gussets by notching small sheetmetal squares. Since the riser needs a flat top to match the seat's bottoms and a flat base to match the floor, the upper gussets mount *below* the upper flanges and the lower gussets mount *above* the lower flanges. Frank used flush-mount rivets to maintain the flat surfaces. He needed to countersink the flanges with a not-too-common 100-degree countersink cutter to use them; he used what's referred to as a countersink cage to ensure that he cut each countersink perfectly perpendicular to its hole.



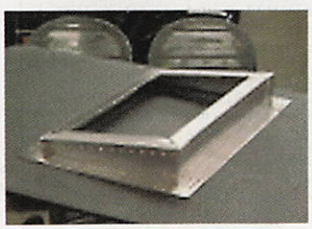
Equipped with either a bearing or a bushing that allows the cutter to both rotate and plunge, the Avery Micro-Stop countersink cage Frank uses turns an ordinary drill into a mini drill press of sorts. By pressing the nylon foot piece to the panel, he's ensured a perfectly concentric hole each time he pushes the cutter into the panel. When set up properly, the tool prevents the replaceable bit from cutting too far into the panel, too. At $40, the bronze-bushed piece is a remarkable value.



As he did with the battery box, Frank fashioned doubler plates to reinforce the seat risers. Again, he installed his rivets by conventional means, with a rivet gun, a set, and a bucking bar.



To increase their functionality, Frank outfitted the driver-side seat riser with a piano hinge and door. Incidentally, the flat surfaces of these risers may serve as switch mounting locations; however, given that this style of fabrication smacks of purpose and utility, we think it would be rather strange to try to hide anything in a car equipped with such risers. Instead, hit the surplus market and come up with equally purposeful-looking switches. Then show off your scrounging skills by installing them in the dash.



Remember our earlier instruction to check the minimum surface working area your sheetmetal bender needs to do its job? Here's why: The first seat riser design sat the seat too high in the car. The solution: Make the riser thinner—specifically 2 1/2 inches high tapering down to an inch high at the rear. Luckily Frank's brake could bend the materials ... barely. Any lower and Frank suggested dropping the seat on the floor and outfitting the car with gynecological stirrups for thigh support.

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DREAM TRADE

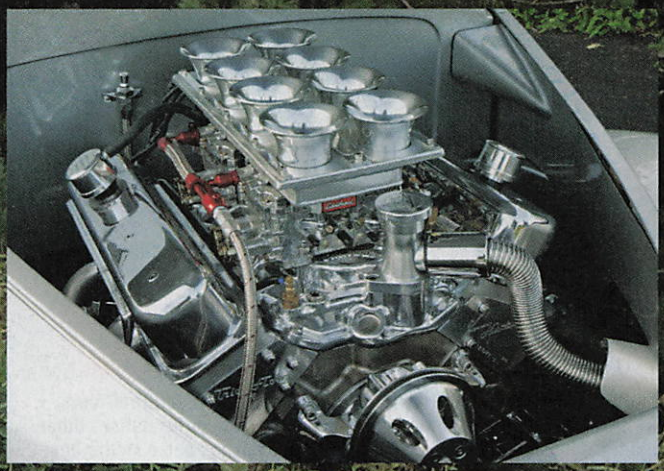
denny terzich sr. swaps a '37 ford for this 1941 willys roadster

BY ALAN REBESCHER

It was supposed to be an even-up trade—finished street rod for finished street rod. Denny Terzich Sr. of North Huntingdon, Pennsylvania, had a sweet orange-hued Wild Rod Factory 1937 Ford sedan (featured in the April 2005 issue of *STREET RODDER*) that just didn't spin his personal tach like it used to. So he went looking for something new, and found this 1941 Willys roadster in California.

The Dennis Taylor (now Impact Classic Reproductions) Swoopster-bodied car looked simply luscious in its PPG Vibrance Silver coat and come-hither red leather interior. Denny fell for the Willys, hook, line, and chrome shifter, and talked the current owner into trading it for his '37. Arrangements were made and the car was on its way to Pennsylvania. Unfortunately, the honeymoon didn't last much longer than the time it took to get the car out of the trailer. The Willys looked terrific on the outside but not so stellar on the underside. Ride and handling were less than optimal. ("Buckboard would have been a polite way of describing it," Denny said.). The 350 Chevy/TH400 drivetrain looked like—and performed like—refugees from somebody's old farm truck. According to Denny, "The car looked like it was thrown together with whatever parts could be found."

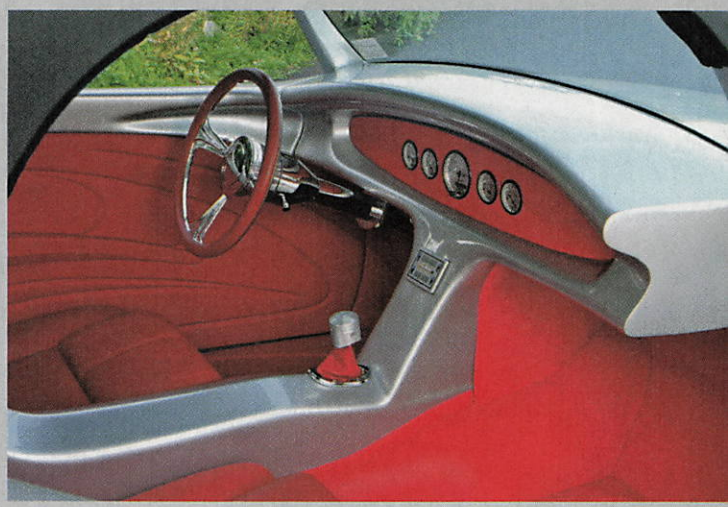
The dream trade was looking a bit one-sided. But Denny had an ace in the hole—his son, Denny Jr. Both men were founding members of ProRides (www.goprorides.com), the Warrendale, Pennsylvania, shop with a well-deserved reputation for building cutting-edge rods and customs. Examples of ProRides' work include Denny Jr.'s 1956 Chevy (it won the Goodguys *Street Machine of the Year* in 2002) and the stunning SR61—the 900hp 1961 Ford Starliner ProRides built with Summit Racing in 2006.



The quartet of velocity stacks is part of a cleverly designed welded sheet-metal air cleaner (a flat panel filter sits up inside). It covers an Edelbrock Performer dual-quad setup on a warmed-up ZZ4 350 crate engine. The small-block has a COMP Cams hydraulic stick and a pair of Trick Flow Super 23 Street/Strip cylinder heads. ProRides fabbed the valve covers.

It takes airbags to get a hot rod this low, so the 2x3-inch tube chassis has Air Ride Technologies air suspension on all four corners. A triangulated four-link holds up a 9- inch Ford rear axle. Up front is an independent setup with polished stainless tubular A-arms.

STREET RODDER



The Willys came with the cowhides already installed, but ProRides un-installed it to put in some Dynamat sound and heat insulation. Other additions include Auto Meter Platinum Series gauges and a shifter boot and trim ring made by the Terzichs. The shifter is attached to a Turbo 400 transmission with a B&M 10-inch converter.

The Terzichs could have turned the Willys over to Curt Ukasic and the crew at ProRides and had them fix what needed fixing. But with the shop filled to the rafters with customers' projects, the boys decided to redo the roadster themselves in Denny Sr.'s garage. Between the two of them, there was no lack of talent for putting the Willys right.

The Terzichs began the process by disassembling the entire car. The fully boxed, 2x3-inch tube frame was retained, as was the rear suspension, which consists of an Air Ride Technologies triangulated four-link with polished stainless steel bars, airbags, and shocks. The grease-covered third member in the 9-inch Ford rear axle was ditched and replaced with a 3.73-geared Currie 9-Plus.

The engine bay received its share of attention to detail, too. Since Denny could not keep the Willys' tired 350 running, it was pitched in favor of a new powerplant. The new 350 is based on a GM Performance Parts ZZ4 short-block with a hotter COMP Cams hydraulic camshaft. A Trick Flow Specialties Super 23 Street/Strip aluminum head sits atop each cylinder bank.

The biggest piece of eye candy is definitely the induction system. At first glance, it looks like traditional velocity stacks atop a sheetmetal

The Willys arrived with the gorgeous PPG Vibrance Silver paint already applied. Denny and his son, Denny Jr., added the chrome side trim (hand-made from half-oval solid brass stock) and the custom lift-off top. The top is covered with black Mercedes-style convertible cloth, which looks great against all that silver and shiny stuff.

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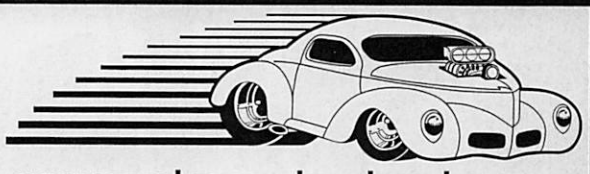

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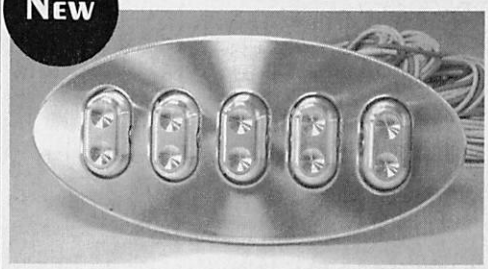

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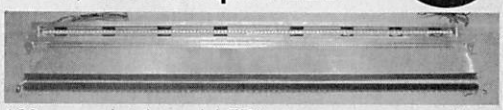

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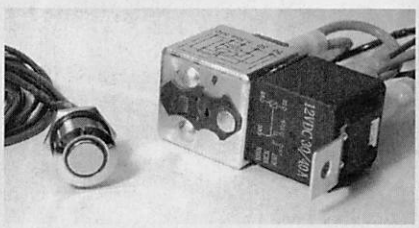

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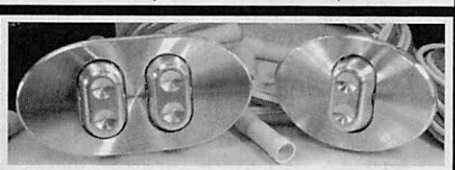

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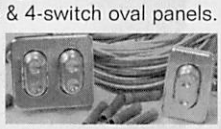
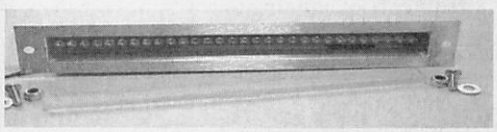


"Skinny" Hot Slot 3rd Brake Lights

New



Ultra Skinny - approximately 1/4" wide x 7-1/2" long x 1/2" deep clear lens gives you a disappearing 3rd Brake Light effect. It's true magic!
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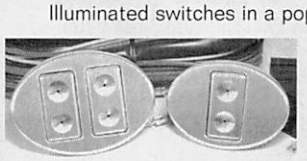

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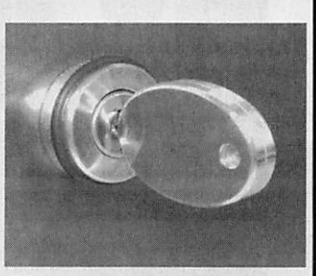

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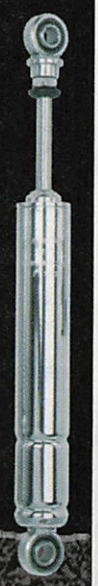

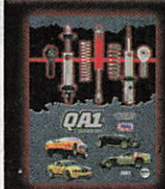

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intake, but closer inspection reveals an Edelbrock Performer RPM dual-quad intake and two 600-cfm Performer carbs sitting underneath a cleverly designed air cleaner. Props go to Denny Jr. for the fabrication and East Bank Machine for the machine work on the cool air cleaner.

Since the Willys bodywork was well done and the paint was a color he liked, Denny Sr. elected to leave well enough alone. He and Denny Jr. fashioned the chrome-plated side molding from half-oval solid brass stock to dress things up a bit. A lid was fashioned from fiberglass and covered with black Mercedes-Benz convertible top fabric since a roadster is not a roadster without a removable roof—not that the top comes off very often. "The top looked so good when we first put it on, I haven't had it off since!" explained Denny Sr. Can't say we blame him.

The upholstery job was also well done and left unmolested. ProRides did add a layer of Dynamat insulation to the floor, doors, kickboard, and trunk before reinstalling the red leather on the custom-built buckets and the doors. The Dennys made a shifter boot and ring to cover the hole in the console and added Auto Meter Platinum Series gauges. Lucky guy that he is, Denny Sr. gets to hold a new Billet Specialties steering wheel as he cruises.

Denny Sr. took his first drive in the Willys in June 2007 after five months' worth of work. He has taken it to several shows as well, including the Goodguys PPG Nationals in Columbus and the ISCA Show in Pittsburgh. But Denny has the most fun just cruisin' with his wife, Barbara.

And if you ask Denny if the dream trade was worth it, the big smile on his face will definitely provide the answer. SR

Behind each of these Bonspeed Big Block billet hoops is a 13-inch Baer disc brake setup. The front brakes have six-piston calipers, while the rear binders have four-piston calipers. That ought'a be plenty of whoa for this roadster.

FACTS & FIGURES

Denny Terzich Sr.

North Huntingdon, Pennsylvania
1941 Willys roadster

CHASSIS

Frame / Manufacturer	Dennis Taylor, Impact Classic Reproductions (Camp Point, IL) 2x3 boxed tube
Chassis plumbing	Earl's braided hose, stainless steel hard tubing
Rearend / Ratio	9" Ford w/ Currie Ent. (Anaheim, CA) 9-Plus third member, 3.73 gears & limited slip
Rear suspension	Air Ride Technologies (Jasper, IN) triangulated four-link w/ airbags & shocks, all polished stainless steel
Rear brakes	Baer Brake Systems (Phoenix, AZ) 13" disc w/ four-piston calipers
Front suspension	Air Ride Technologies stainless steel tubular A-arm w/ airbags & external shocks
Front brakes	Baer 13" disc w/ six-piston calipers
Master cylinder	Wilwood Eng. (Camarillo, CA)
Steering box	Flaming River (Berea, OH) manual r&p, chrome plates
Front wheel make, size	Bonspeed Big Blocks, 18x8
Rear wheel make, size	Bonspeed Big Blocks, 20x11
Front tire make, size	BFGoodrich, 225/40ZR-18
Rear tire make, size	BFGoodrich, 305/40ZR-20
Gas tank	Rick's Hot Rod Shop polished stainless

ENGINE

Make	GM Performance Parts ZZ4
Displacement	350 ci
Crankshaft	GM forged 1053 steel
Rods	GM 5.7" powdered metal
Pistons	GM hypereutectic flat-top
Camshaft	COMP Cams (Memphis, TN) hydraulic
Water pump	Meziere Ent. (Escondido, CA) polished billet aluminum
Cooling fan	Be Cool electric
Radiator	Be Cool aluminum
Alternator	Powermaster (Knoxville, TN) 100-amp
Heads	Trick Flow (Tallmadge, OH) Super 23 Street/Strip aluminum cylinder heads, 72cc chamber / 195cc intake ports
Valves / Springs	2.02" intake / 1.60" exhaust valves, 1.460"-diameter dual valve springs
Rockers	Trick Flow roller rockers, 1.60 ratio
Valve covers	ProRides (Warrendale, PA) custom billet aluminum w/ welded-on wire looms
Manifold / Induction	Edelbrock (Torrance, CA) Performer RPM dual-quad polished intake manifold w/ 600-cfm Performer carburetors
Ignition / Wires	MSD Ignition (El Paso, TX) 6 AL ignition, MSD Pro Billet distributor / MSD coil & wires
Headers	Hooker stainless steel, 1 7/8" primaries
Exhaust / Mufflers	2 1/2" dual exhaust w/ Flowmaster (Santa Rosa, CA) 40 Series mufflers
Other engine facts	velocity stack-style air cleaner custom-made by Denny Terzich Jr., ARP 12-point polished stainless steel fasteners & Earl's braided hose & AN fittings

TRANSMISSION

Make	GM Turbo 400
Converter	B&M Racing & Performance Products (Chatsworth, CA) 10 inch, 3,000-rpm stall
Shifter	Lokar (Knoxville, TN) w/ piston shift knob
Trans mods	B&M shift kit
Driveshaft	3"-diameter aluminum by Inland Empire Driveline (Ontario, CA)

BODY

Body style / Material	1941 Swoopster Willys roadster / fiberglass
Body Manufacturer	Dennis Taylor, Impact Classic Reproductions
Body Mods	laidback windshield, pancaked fenders & hood, molded-in taillights
Hood	Dennis Taylor, Impact Classic Reproductions fiberglass
Grille	Dennis Taylor
Paint type / Color	PPG Vibrance / Silver
Headlights / Taillights	Mini Cooper front headlights & custom-made LED taillights
Other body items	custom lift-off fiberglass roof w/ black Mercedes-Benz cloth covering, chrome-plated brass side moldings—all done by ProRides

INTERIOR

Dashboard	Dennis Taylor, Impact Classic Reproductions
Insert / Gauges	Auto Meter (Sycamore, IL) Platinum Series gauges
Insulation	Dynamat (Hamilton, OH)
Wiring	Painless Performance (Fort Worth, TX)
Steering wheel	Billet Specialties (La Grange, IL)
Steering column	Flaming River billet
Interior mirror	Billet Specialties
Seats	custom-made buckets
Material / Color	leather / red
Carpet	red leather
Other interior items	red leather door panels; custom-made center console, shifter ring & boot

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SGM 8507	4:56	198.00
Ford 9"		
SFD 906	4.11	180.00
SFD 907	4:56	180.00

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Match Game

the secret is component compatibility

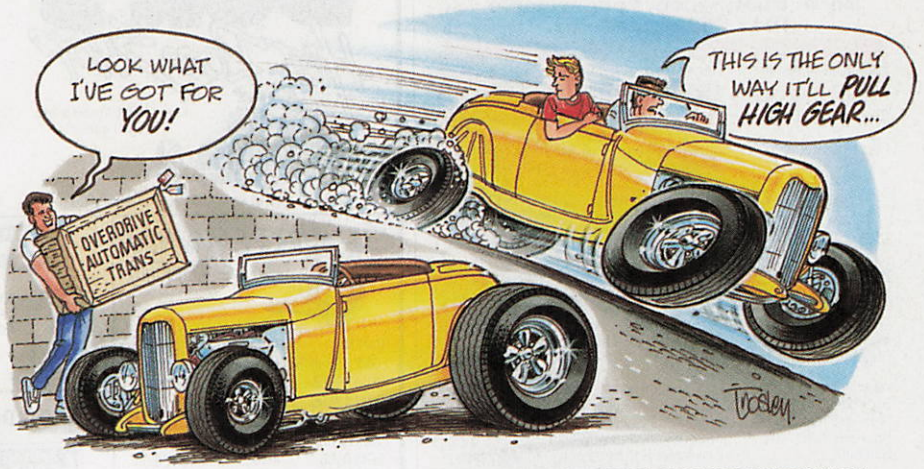


ILLUSTRATION BY GEORGE TROSLEY

At one time it wasn't unusual for a hot rod's emphasis to be strictly based on performance; the goal may have been top speed on the dry lakes, or a low elapsed time at the dragstrip, but proper gearing always played an important role in achieving the objective. Of course, some cars played a dual role and were used on the street as well, but that meant compromises had to be made. If you were a drag racer, it didn't take long to learn that highway gears didn't work at the drags any better than a close-ratio four-speed and a 4.88:1 ring-and-pinion did on the highway. So, unless a quick-change was used, the only choice was to have more than one center section with gears appropriate for whatever it was you intended to do.

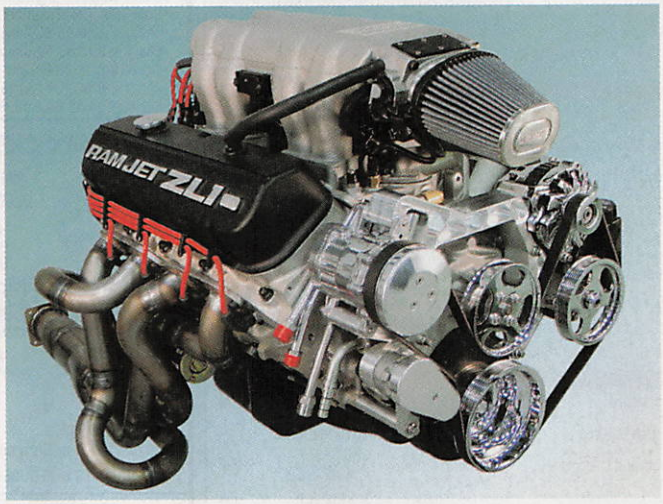
While performance is still important to most street rodders, drivability is even more so, and choosing the proper gear ratio is just as critical for one as the other. In the December '07 issue of *STREET RODDER*, we published a story called "Playing The Numbers" that showed the relationship between various engine components and how they increased horsepower and torque. The point was engine components have to be compatible to achieve the best results; and the point here is the rearend ratio of a street rod has to be compatible with the engine and a variety of other components as well.

FINAL GEAR RATIOS

When selecting a final gear ratio for a race car, the general idea is to take advantage of the engine's power curve and make it go as fast as possible in the confines of the course on which it's competing. Taking advantage of the power curve is a little harder to define with a street rod because it depends on how the car is being used; but one common mistake is over-gearing, and it's usually the result of several factors. One is tire size—bigs 'n' littles are a part of the package on most street rods, but those tall tires also serve to raise the effective gear ratio. (For our purposes here, a higher gear ratio is lower numerically; in other words, 3.00:1 is higher than 4.00:1.)

As an example of how tire size impacts gearing, the engine in a street rod with a transmission having a 1:1 high gear, 3.70:1 rear gears, and 25-inch tall tires (effective diameter accounts for some "squish" under a load and is usually tire diameter x .094, or in this case 23.537 inches) will turn 3,081 rpm at 60 mph. With 29-inch tires (27.26-inch effective diameter), engine speed drops to 2,656 rpm (these numbers may not be exact, but they're close).

Now let's take that same combination and add a 700-R4 overdrive automatic with a 0.7 high gear. With the 25-inch tires, the engine will turn 2,157 rpm at 60 mph; engine speed drops to 1,859 rpm at 60 mph with more street rod–like 29-inch rubber. What's really interesting is Fourth gear at 5,500 rpm would work out to be 178 mph. The same combination with 3.08:1 rear gears would result in 1,548 rpm at 60 mph, and 213 mph at 5,500 rpm if the engine could pull it—great for Bonneville, but not for the street.



Getting the most out of any engine requires a coordinated approach when selecting the transmission, rearend gear ratio, and tire size. Accessories are also part of the mix—this ZL1 is equipped with a Vintage Air Front Runner drive system to spin the alternator, A/C compressor, and P/S pump at appropriate speeds.

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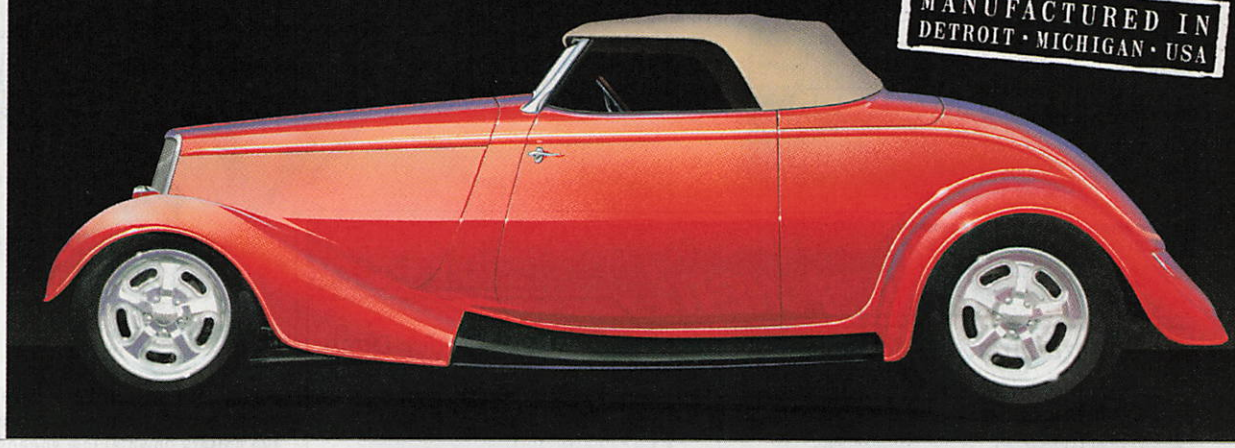

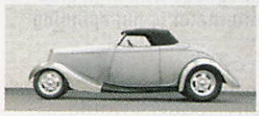

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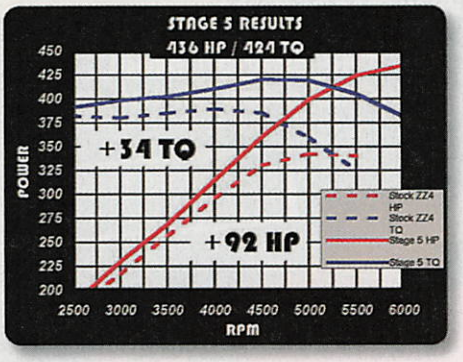
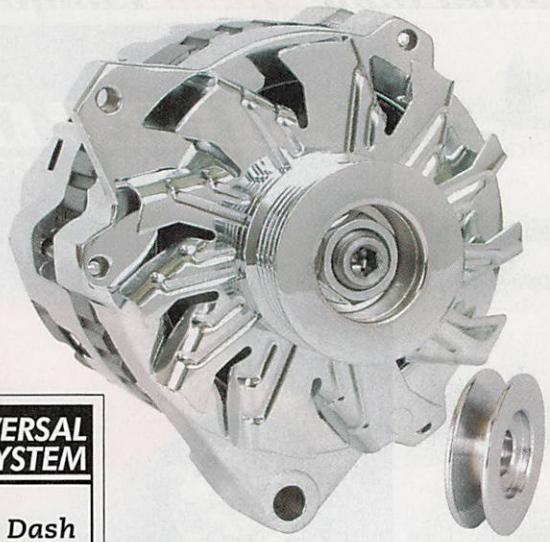


This is a dyno chart of a stock ZZ4 crate motor and a COMP Cams Stage V version (see *SRM* Dec. '07 for engine details); note the rpm for the horsepower and torque peaks. Engine specs should be compatible with the car's intended use, and gears should be matched to the engine.



Alternator rpm is critical, particularly in an accessory laden vehicle. It is possible to run the battery down at low speeds with high electrical demands if the alternator is not spinning fast enough.

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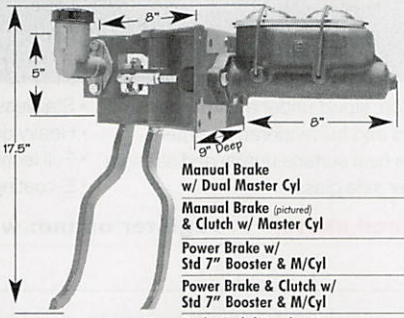

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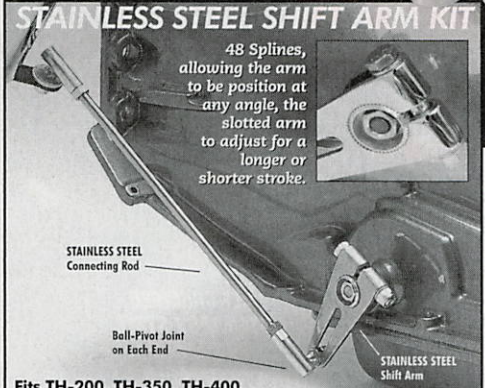
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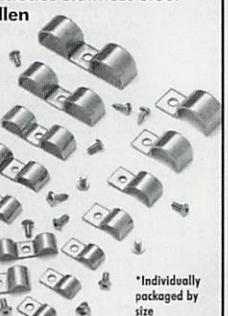

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At a glance, many rodders would assume that high gears and cruising at low rpm would be advantageous, hence the widespread use of overdrive automatics. But the fact is running an engine too slowly will reduce its efficiency. Throttle response will be poor, engine vacuum will often drop to the point where mileage suffers, and the slightest attempt to accelerate usually results in the transmission downshifting one or more gears, which is not only unnecessary but also annoying.

We recently discussed this issue with Joe Abbin of Roadrunner Engineering. He took the time to do some computer simulations, and his research suggests that peak part-throttle operating efficiency for many gas engines falls in the area of 2,000 to 2,500 rpm. This confirms why most factory overdrive transmissions keep the engine in this approximate rpm range at highway speeds. Keep in mind there are variations with higher-performance engines. Look at the following dyno results and you'll see the horsepower and torque peaks move up the rpm scale (roughly 500 rpm in this example) with a more aggressive cam and related parts; the same will hold true for part-throttle numbers. Simply put, mild engines are happier at lower rpm than their high-performance counterparts, and gearing should reflect

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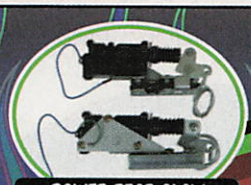

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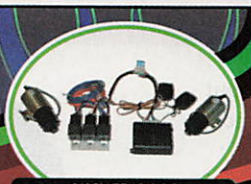

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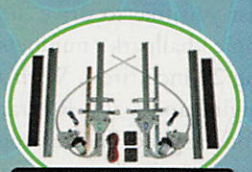

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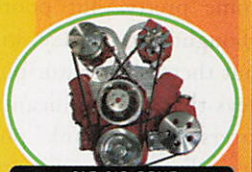

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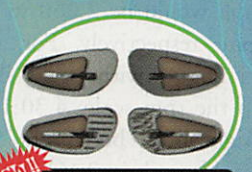

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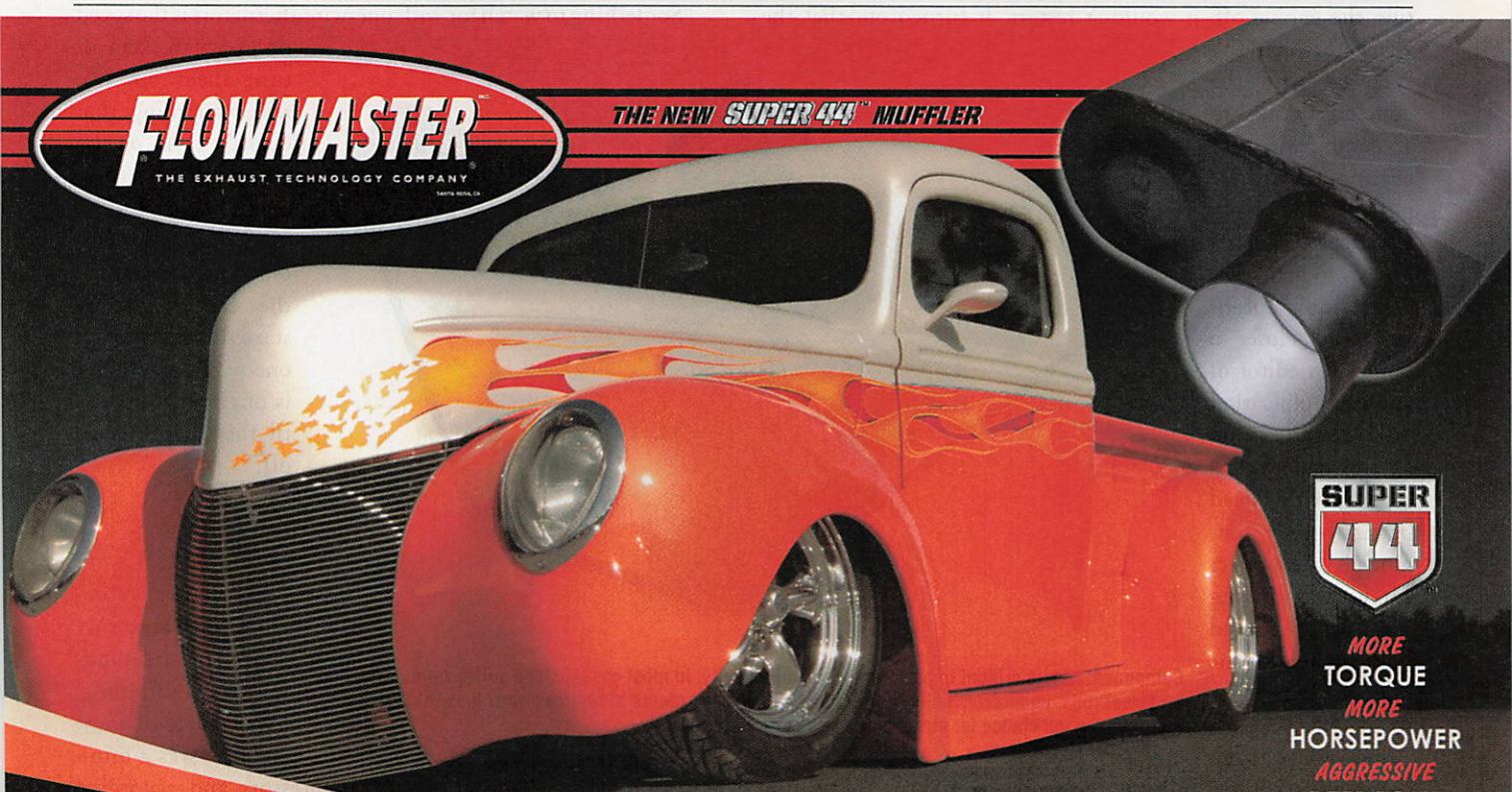

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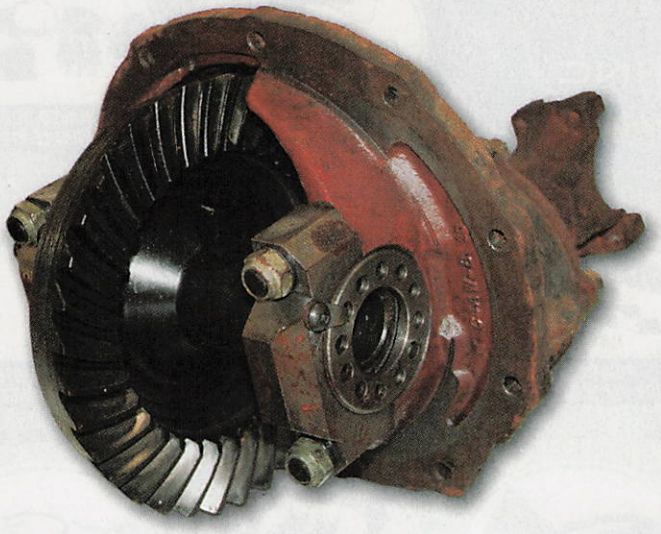
that; as one engine builder put it, "You don't plow with a racehorse or race a plow horse."

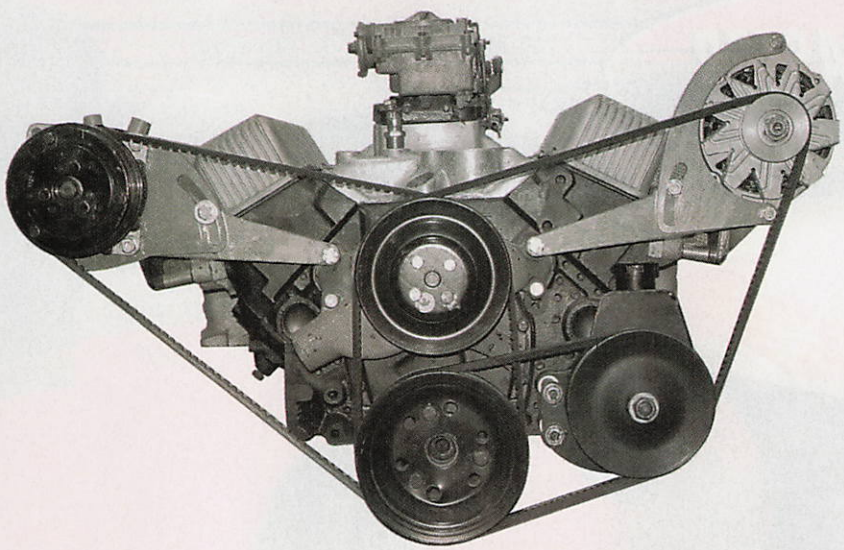
Although the ideal rearend gear ratio will vary with a number of factors, including how fast you like to drive, here are some ballpark numbers (using 29-inch tires). With a mild engine and a 700-R4 transmission, a good choice would be rear gears in the area of 3.90 to 4.10:1—60 mph would result in 1,960 to 2,286 rpm and 70 mph would be 2,060 to 2,403 rpm, respectively. For a hotter engine with peaks slightly up the rpm scale, 4.30:1 gears might be a better choice and would result in 2,161 rpm at 60 mph and 2,521 rpm at 70 mph.



The thought of running 4.11:1 gears scares some rodders, but keep in mind that with a 0.70 overdrive, it's roughly the equivalent of a 2.80:1 ring-and-pinion with a 1:1 top gear in the transmission.

COMPONENT RPM

Not long ago, we received an interesting letter from a street rodder who was having trouble keeping his street rod's battery charged on long trips; after driving long distances then shutting the engine off, it wouldn't restart. It turned out that the alternator couldn't keep up with the demand thanks to a combination of gearing, underdrive pulleys, and every electrical gadget known to man. Another similar problem struck closer to home. An editor of another publication was stranded on a crowded SoCal freeway with a dead battery—the engine in the project car he was driving was never revved high enough for the one-wire alternator to energize.



Component rpm is critical to performance and longevity. In most cases, stock pulley ratios work fine for street rods; underdrive pulleys are often used by drag racers to reduce power loss, but are not normally a good choice for street applications.

As we've said, component compatibility is the secret to making everything on a street rod work properly; the charging system is no exception. According to Powermaster's Stacy Edelmann, they show output based on alternator rpm. She added, "We started showing output in this form in our catalog because there are so many pulley options that a standard rating doesn't always tell the customer what the alternator's output will be with the combination being used (a big crank pulley and little alternator pulley as an example). What we recommend is a 2.75 or 3:1 pulley ratio. Unfortunately there are some pretty, but poorly thought-out, pulley kits out there. Alternator pulleys that are significantly oversize (or crank pulleys that are significantly undersize) may spin the alternator too slow to keep up with the vehicle's electrical demands. But, at the same time, you have to be careful not to go too far in the other direction and over-spin the alternator. This is much harder to do, but it's still possible. This would be an alternator rpm of 18,000 or more.

"Something to watch for with one-wire alternators is the speed necessary to excite or turn them on. We reject anything that doesn't turn on by 3,000 rpm, but there are some that require higher speeds. This only matters when the car is initially started, as once a one-wire alternator is on, it stays on until the car is turned off."

A/C COMPRESSORS

Another common accessory found on street rods is air conditioning. We wanted to know if there was a minimum and maximum rpm for A/C compressors, and, according to Ryan Zwicker of Vintage Air, the answer is yes. "Compressor operating speed is very important, both on the low end and at the high limit," he said. "We try to target at least 1,000 rpm at

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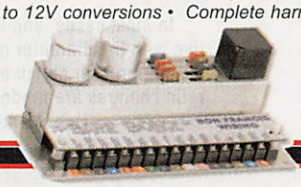

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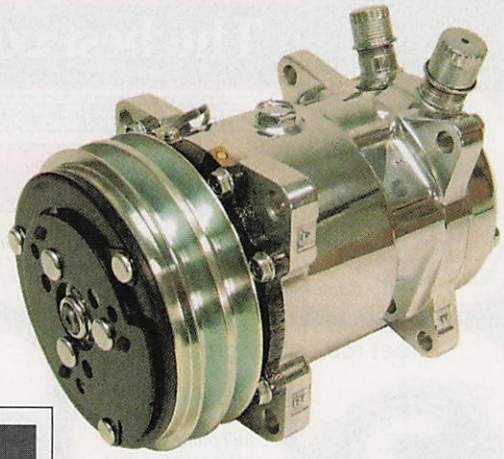
the compressor under idle conditions. On the Front Runner systems, we run the FSB and LSX at 1.41:1, and the SBC/BBC at 1.47:1. Both of these ratios give approximately 1,000 compressor rpm at 700-rpm engine idle. These ratios allow us to take the Front Runners to 6,500 rpm without damaging the compressors. There is a bit of a safety factor as well. We know that Front Runners have been run over 7,000 during races with no failures, but at those speeds the power steering pumps make a lot of heat and must use a cooler. The sweet spot that we'd like to see the compressor run at on the highway is around 3,000 to 4,000 rpm. Anything over 4,500 rpm at the compressor just builds heat and doesn't help in cooling the car.



In most cases, you'll have to live with the diameter of the A/C compressor clutch pulley, so ratio changes are made with the crankshaft pulley.

"With the SD508 compressors, you can run a bit lower at idle, but you can't go as high at the top," Zwicker continued. "If the expected max speed of the engine will exceed the rated max of the compressor, a shutoff device should be used to protect the compressor. That said, I know of SD508s running momentarily over 8,000 rpm without problems, but it's just a matter of time before it grenades. I know of an SD7B10 compressor that has seen in excess of 11,000 rpm without failure, but if it does fail, the warranty obviously won't apply."

POWER STEERING PUMPS

Last but certainly not least, we wanted to find out if there was an optimum speed for power steering pumps, so we asked Steve Cole at Flaming River for some comments. According to Cole, "There is a direct correlation between engine speed and the performance of any of the accessories driven via the crankshaft. This includes the power steering pump. Power steering pumps are designed to operate within an envelope determined by the pump's shaft speed, which is determined by the pulley.

"The lower engine speeds that are the trademark of overdrive transmissions

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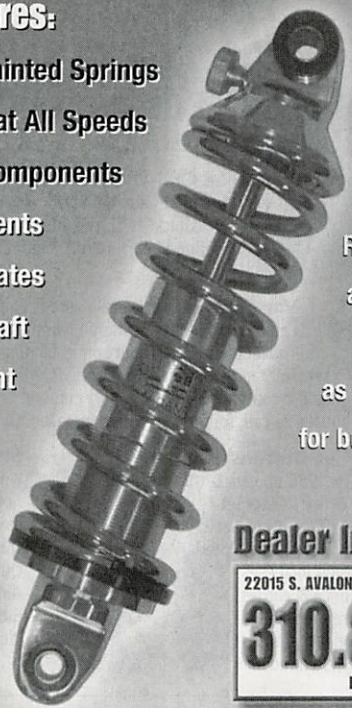

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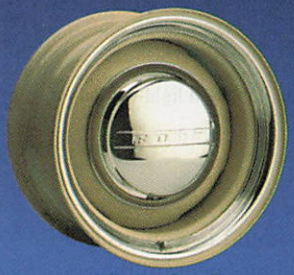

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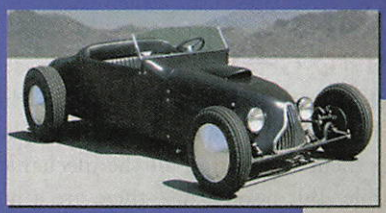
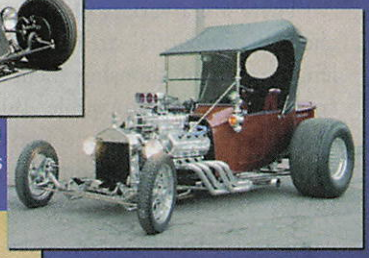


Our Staff Can Help You Choose The Right Parts For Your Hot Rod



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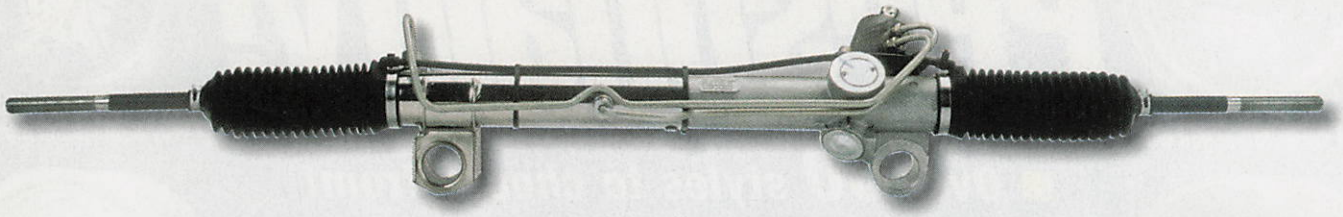
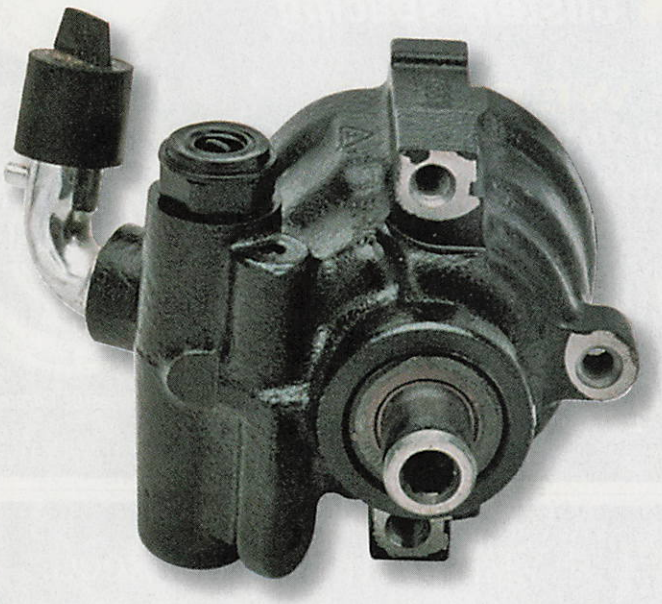


Steering feel is often a matter of personal preference. However, low pump pressure will make it feel heavy, while high pressure will make it light—often to the point of being overly sensitive.



Flaming River suggests a 4-inch pulley with its Stage II power steering pump.

(and taller-diameter rear tires) will lower the operating speed of the pump," he continued. "This in turn lowers the volume of power steering fluid delivered to the rack-and-pinion or the steering box. The net result is the steering feels heavier and less responsive at low cruising speeds.

"The problem can be overcome by utilizing a smaller pulley to speed up the pump shaft speed and deliver the required volume. Many OEM and aftermarket standard pulleys are 5- to 7-inch diameters, designed for transmissions without overdrive.

"To address power steering fluid volume, Flaming River recommends the use of its Stage II pump equipped with a 4-inch pulley (V- or serpentine drive). This pump and smaller pulley accomplishes two things. At low rpm cruising speeds, it ensures the volume is adequate to provide proper steering response. A related issue is steering response at highway speeds. The tuned internal bypass valve of the Flaming River Stage II pump comes into play at 1,700 rpm (pump shaft speed), bypassing the excess volume and providing the driver with a predictable, stable steering pattern similar to manual steering.

"Another possible solution would be a smaller accessory drive pulley on the crankshaft, but that should be approached with caution. What might work for one component on the accessory drive may be incorrect for another item and create another set of problems.

"Is there a maximum/minimum/ideal when discussing power steering pump speeds? It is a matter of pump design, rack-and-pinion or steering box design and operating ranges, plus the intangible of personal preference. In the end, personal preference will probably be the most significant factor. Keep in mind what may be acceptable for a 200lb man may be too heavy for a slender woman.

"It would seem the best choice is to evaluate the use of a smaller-diameter pulley, with the understanding that it might negatively impact steering sensitivity at highway speeds because the pump's valving will directly impact steering behavior. You must know how your pump will respond to this change at both ends of the spectrum. If there is a choice, do not change the pulley size if there will be an adverse effect at higher speeds, for you can deal with the heavier steering much easier than a car in the ditch (or worse) because of super-sensitive steering response.

"Another very simple solution is to lock out the overdrive at low cruising speeds, which will raise the engine speed to meet the needs of the pump and the rack or box to provide the desired steering performance."

IT COMES DOWN TO CHOICES

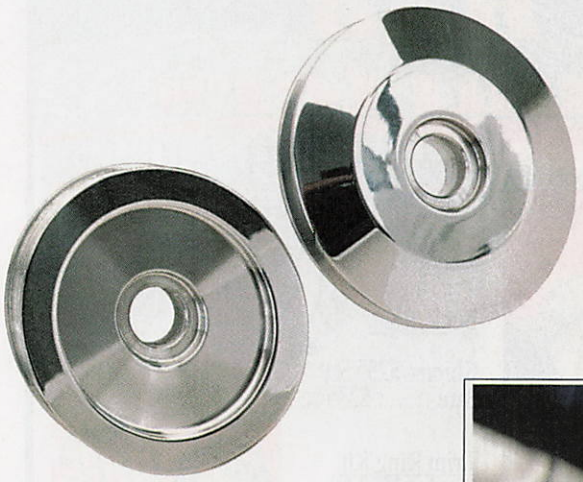
There are a variety of difficult decisions to be made when choosing individual street rod components, and the most challenging part of choosing them is ensuring all the mechanical components are compatible. But never fear—there are a host of computer programs and free calculators on the Internet that will help, and here are some handy formulas if you want to do your own pencil pushing:

mph = (rpm x tire diameter) ÷ (gear ratio x 336)

rpm = (mph x gear ratio x 336) ÷ tire diameter

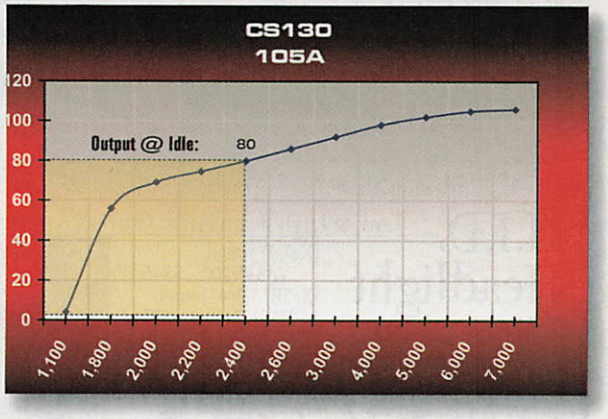
gear ratio = (rpm x tire diameter) ÷ (mph x 336)

tire diameter = (mph x gear ratio x 336) ÷ rpm



There are a number of different size pulleys available if adjustments to the operating speed of the power pump are necessary.

Powermaster furnishes an output chart with all its alternators. The rpm listed on the graph is not for the engine, but rather the alternator's rotor.



Do some number crunching before you start building; it's much easier and less painful to use an eraser to change a simulation than your time and money to change your street rod. SR

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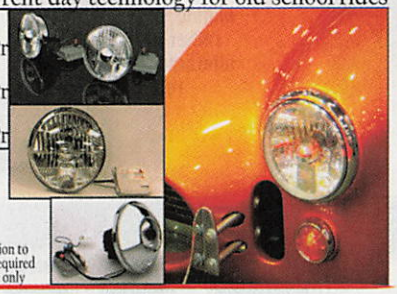

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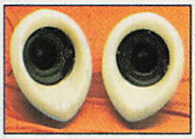

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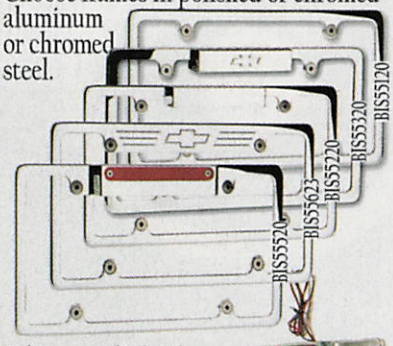

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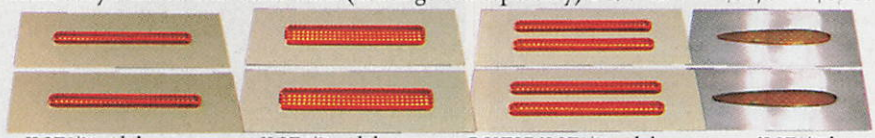
Flush Lens Light Kits in Amber & Red

Match body contour. Lens sands flush (housings sold separately) 2-3/4" & 4"... $50, 6"... $60 Pr



SLOT 1/2" wide lens: 2-3/4", 4" or 6"
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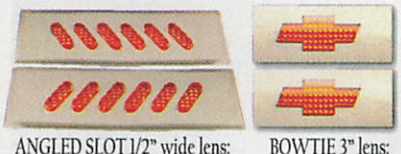
DOUBLE SLOT 1/2" wide lens: 2-3/4", 4" or 6"
SLOT 1/2" lens: 6" only

Now in LED!

Backspace, Std= 5", Low Prof= 2.5"

Simply choose your lens, choose your housing & add epoxy



ANGLED SLOT 1/2" wide lens: 4", 6", 8", 10" or 12"
BOWTIE 3" lens: (use 2-3/4" housing)

Choose Standard or Low Profile Housing
2-3/4" or 4" ..... Incandescent Bulb $95, LED $145 Set
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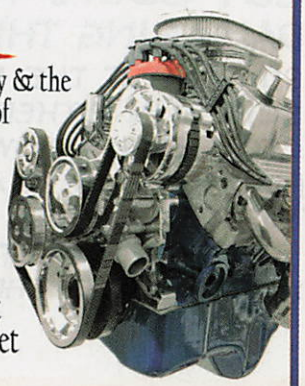
Chrysler Small Block: Prices starting at . . . . . $1,745 Set
Chrysler HEMI & Big Block: Prices starting at . . . . $2,145 Set
Starting prices are systems without Power Steering and A\C.



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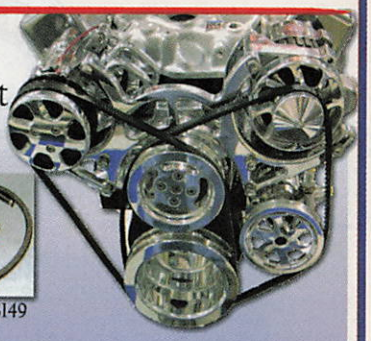
Fully polished system (choose polished or non-polished pumps), with or without A/C
Chevy Small or Big Block: starting at . . . $1,195 Set
*remote power steering reservoirs sold separately.



Power Steering reservoirs . . . . . $145 Ea
Polished with cap & mounting bracket

Smooth BIS77910
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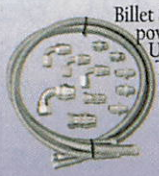

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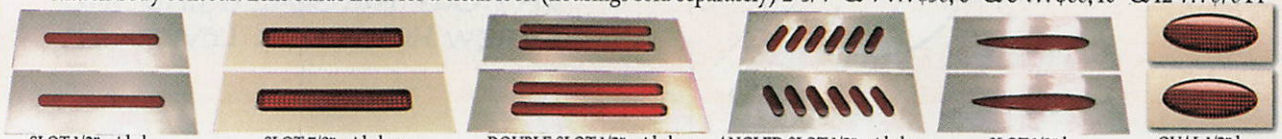

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SLOT 7/8" wide lens: 2-3/4", 4", 6", 8", 10" or 12"

DOUBLE SLOT 1/2" wide lens: 2-3/4", 4", 6", 8", 10" or 12"

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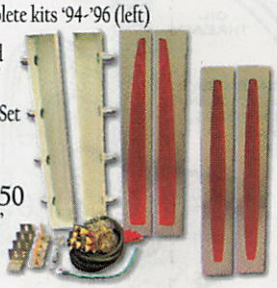
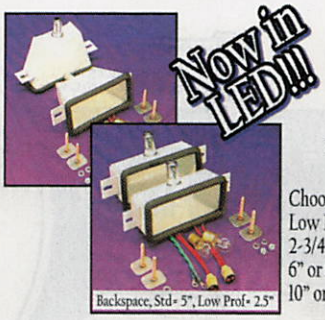
SLOT 1/2" lens: 6" only

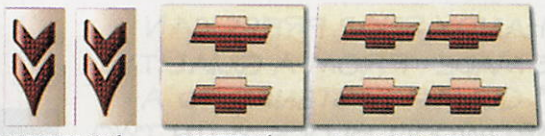
OVAL 1/2" lens: 4 inch only

Caddy style complete kits '94-'96 (left) or '89-'93 (right) Includes Standard or Low Profile 16" housing.
12" lens . . . . $220 Set

Kits use 2 part epoxy HAGRNO $12.50 (lens kits over 6" require 2)







DOUBLE V 3-1/2" lens: (use 2-3/4" housing)

BOWTIE 3" lens: (use 2-3/4" housing)

DOUBLE BOWTIE 6" lens: (use 6" housing)

Choose Standard or Low Profile Housing

LED!

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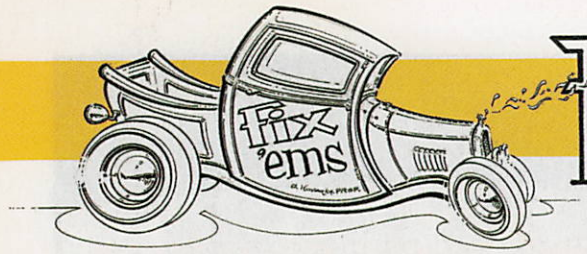
10" or 12" . . . . . Incandescent Bulb $125 Set, LED $175 Set

*price & availability of products subject to change



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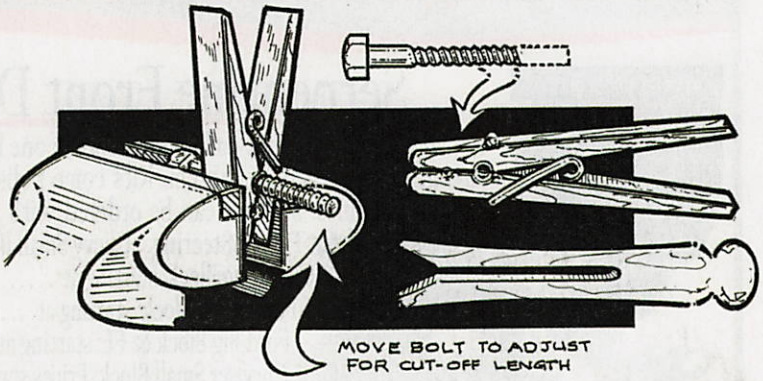

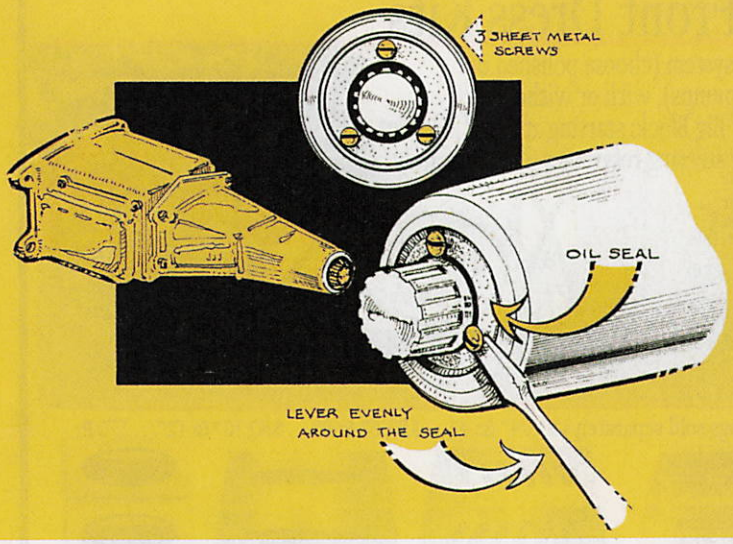

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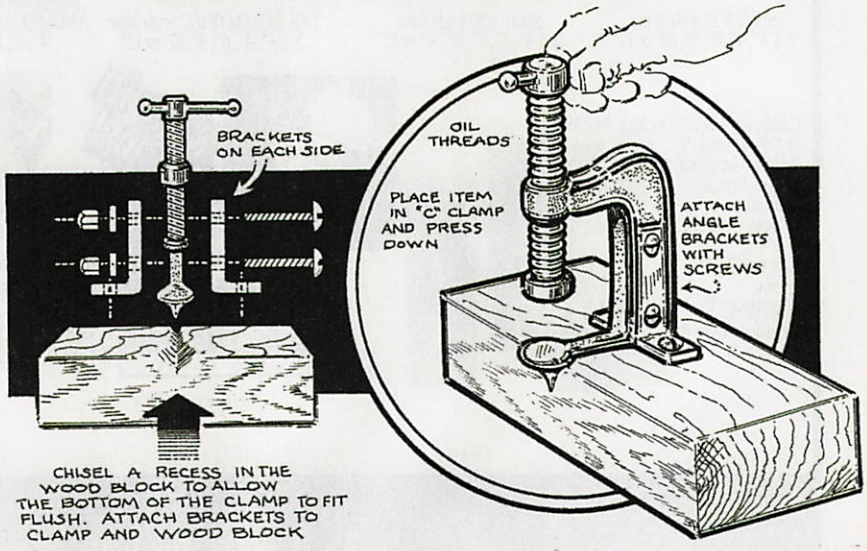
BRACKETS ON EACH SIDE
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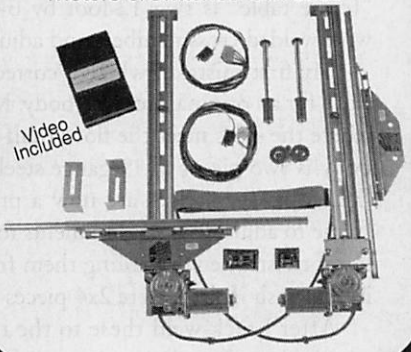

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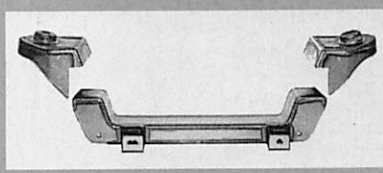

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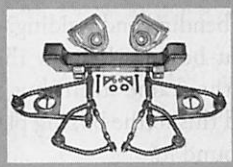

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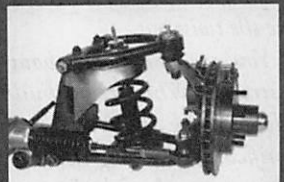

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PROFESSOR HAMMER'S METALWORKINGTIPS

BY RON COVELL | covell@cruzio.com

Hey Ron, great column! I always read yours first. I have questions about the '32 frame I'm trying to build. I've built many frames for '23 and '27 Fords and a few '29s as well. My "frame table" is two 12-foot by 6-inch I-beams side by side, with welded crossmembers and adjustable legs so I can level it.

My first mistake (which I corrected) was using the dimensions for an original steel '32 body. My fiberglass body is thicker where the sides meet the floor (half-inch oversize) where a steel body is two pieces of 19-gauge steel spot-welded together. The framerails themselves are now a problem after narrowing my frame to adjust my measurements for the 'glass body. There is a lot of twist when eyeballing them from the end; they would be in the trash if these were 2x4 pieces of wood.

After I tack-weld these to the table, and push, bend, and tweak them into being square, and then level and plum, I think there may be too much "stored energy" in them just waiting to explode, implode, or just let go. That's my problem—how should I "relax" the 'rails? Is this something to worry about? It seems like I should heat it after welding it to relax the metal. Or, maybe make small pie cuts in the top and bottom of the 'rails, tweak the frame into position, and then weld it up.

I found an article in an old *STREET RODDER* that says to start in the middle where the frame is widest, check the squareness and the diagonal dimensions, and then work to the ends. The front 'rails start to twist past the firewall (the tops of the frame turn in and the bottoms turn out), and one hooks to the right. Back past the rear crossmember, they should turn in and run true to each other. Mine weave in and then turn out.

The '32 framerails are stamped, 10-gauge steel ordered from a large street rod supplier. I unpacked them after delivery, cleaned them, and looked them over carefully. They looked fine—there was no damage in shipment. Am I being overly careful here, and should I just go at it and start bending and welding?

My last question is about boxing. I know the front and rear crossmembers weld to the frame itself, but what about the X-member? Should I weld this to the boxing plates, or weld to the frame and then box around it?

Hugh Hatton
Via the Internet
hotrodhatton@optonline.net

Good to hear from you, Hugh, and thanks for the kind words about my column!

You can never count on framerails to be straight, whether they are new or used; that's why chassis jigs need to be built so beefy—so you can push, pull, bend, wrestle, and tweak the 'rails into their proper shape, and hold them there until the crossmembers are placed. I can tell from your comments that you are a very seasoned builder, and I'm sure you will do a good job with your latest frame.

This is a beautiful custom-built H-frame press, an ideal machine for straightening framerails, as well as for many other tasks. Dave Propst built this machine, and he has documented its construction extensively on his Web site, www.davepropst.com.

To begin with, unboxed 'rails aren't very strong in torsion (twist), so it shouldn't be too hard to get the twist out. Most frame jigs have vertical stanchions spaced every couple of feet or so, so you can just clamp the framerails to these stanchions and this should take the twist out.

You are concerned about building a frame that has built-in stresses. While every builder has different ideas about this, I don't think the level of stress you are talking about is very significant, meaning its level is only a tiny percentage of the ultimate strength of the frame. For this reason, many (if not most)

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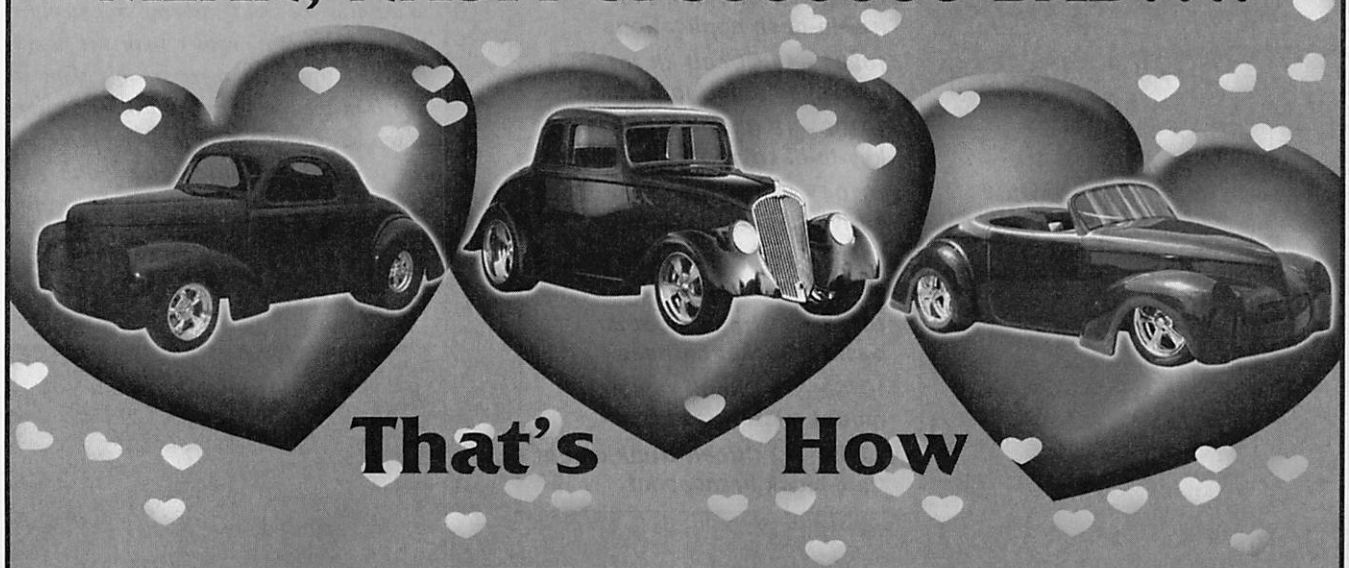

That's How

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builders just get the 'rails clamped into the proper alignment in the jig, and when the crossmembers are welded into place, they hold the 'rails in alignment pretty well. Saying this another way, it would be a very big production indeed to tweak the framerails so they held their shape exactly without applying any clamping or pushing force, and I think you'd be doing more harm than good by either using a lot of heat on the frame or cutting and rewelding lots of little pie-wedges.

I would strongly suggest boxing the frame before the crossmembers are welded in for a couple of reasons. First, the boxing process will go a long way toward holding the 'rails in the proper alignment if you have the 'rails clamped securely into your jig in the proper alignment (with the twist and tweaks removed). Second, you'll have more opportunity to do any straightening on the framerails (if necessary) if you have unimpeded access to the 'rails.

You can pretty much count on the shrinking of the welds during the boxing process to put an arch in the framerails (bowing them out, as seen from a top view). This is normal, and virtually impossible to completely eliminate. Some builders use a large H-frame press to get any excessive arch out of the framerails after boxing, although you may be able to pull the 'rails into the proper shape by clamping it to the stanchions on your frame jig if the arching is not severe. Again, when the crossmembers go in (especially the X-member), that should hold everything in shape pretty well.

While there might be some advantage to welding the front and rear crossmembers to the framerails, rather than the boxing plates, I think it's more trouble than it's worth in the case of an X-member. As long as you have prepared the joints properly, and the boxing plates were welded with good penetration, you should be OK by welding the X-member to the boxing plates. SR

Now you can e-mail your questions to Professor Hammer at covell@cruzio.com or send mail to Professor Hammer c/o STREET RODDER, 774 S. Placentia Ave., Placentia, CA 92870. We'll print your name and city unless you request otherwise. Ron Covell has made several metalworking videos, and offers an ongoing series of workshops across the nation covering all aspects of metalworking. Check them out online at www.covell.biz, or call (800) 747-4631 or (831) 768-0705 for a current schedule of workshops or for a free catalog of videos, books, and fine-quality metalworking tools. You can also send a request by mail to Covell Creative Metalworking, 106 Airport Blvd., #105, Freedom, CA 95019.

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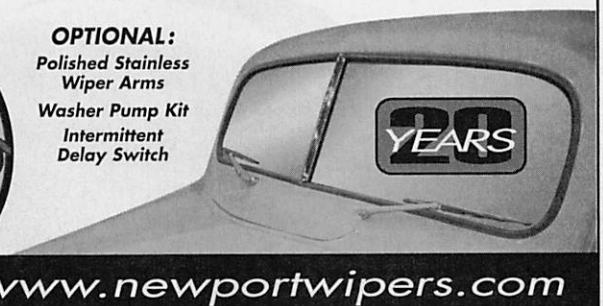

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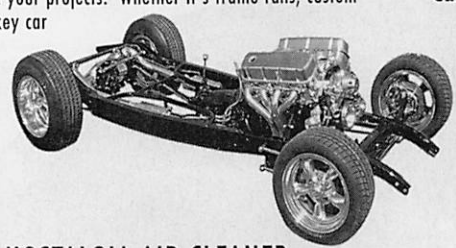

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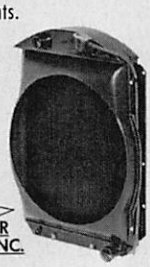

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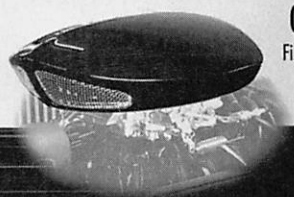

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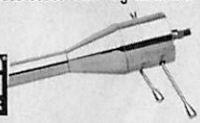

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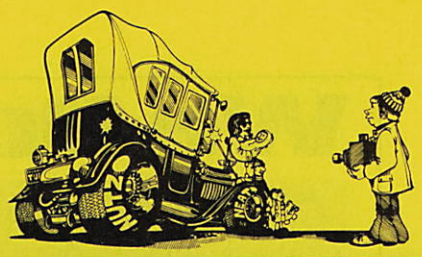
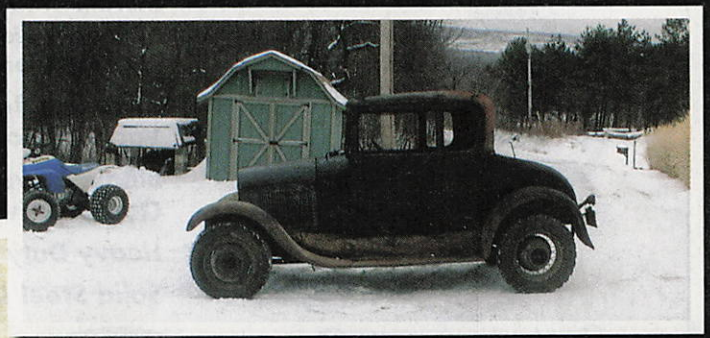
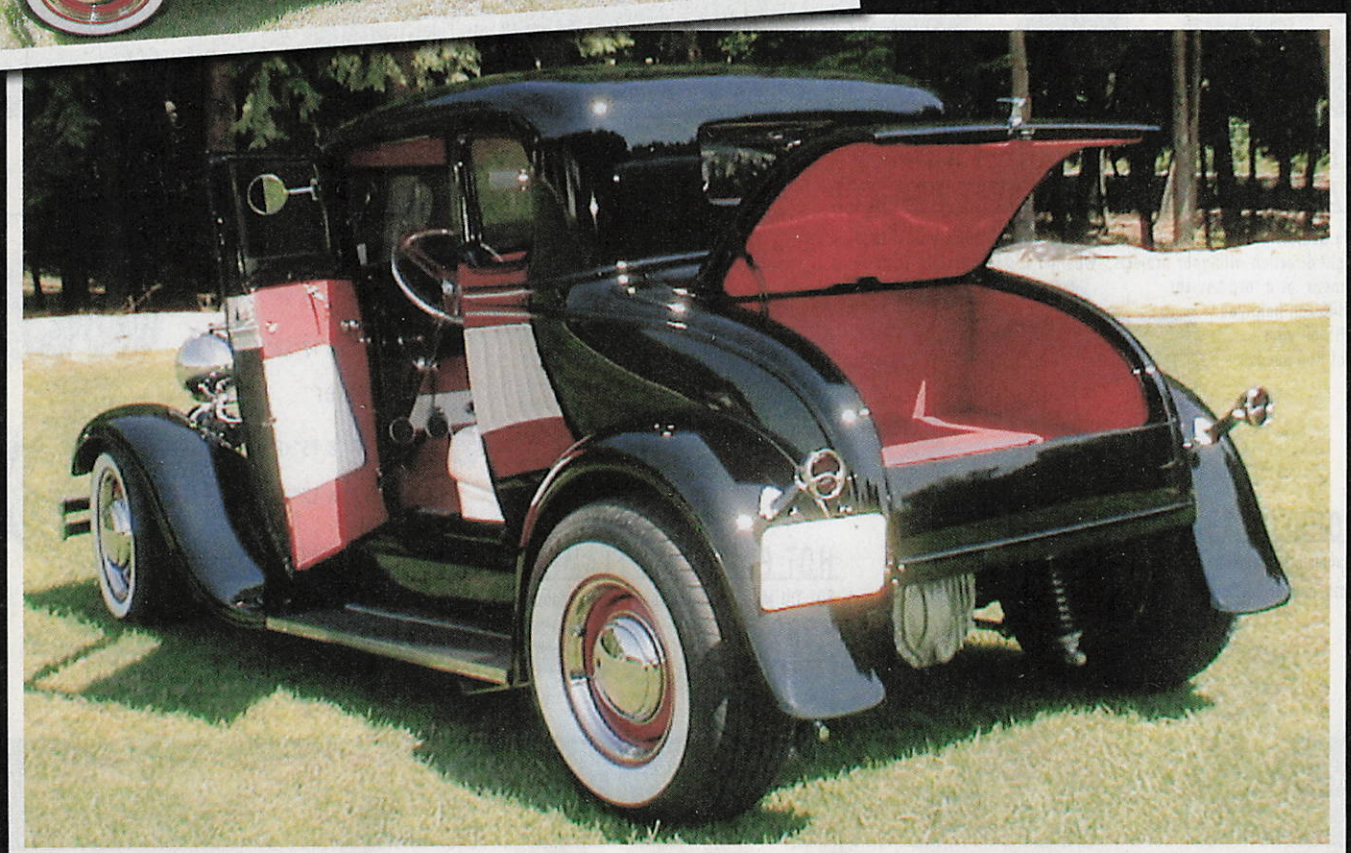
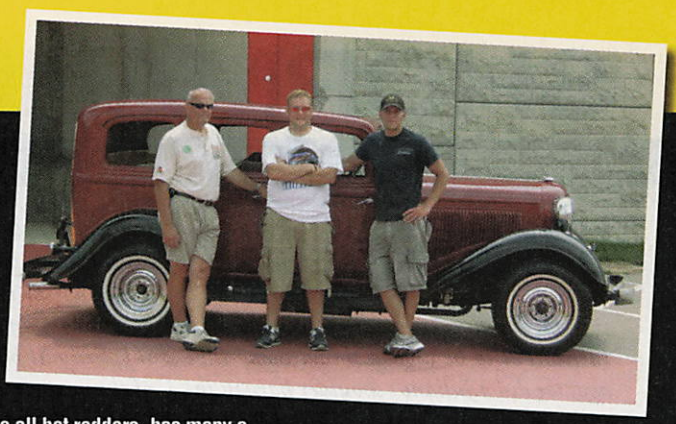


Doug Sleppy's '29 Ford coupe wasn't always the work of art it is today! Here's the coupe back when Doug dragged it home from Ligonier, PA, to his Stoystown, PA, garage.



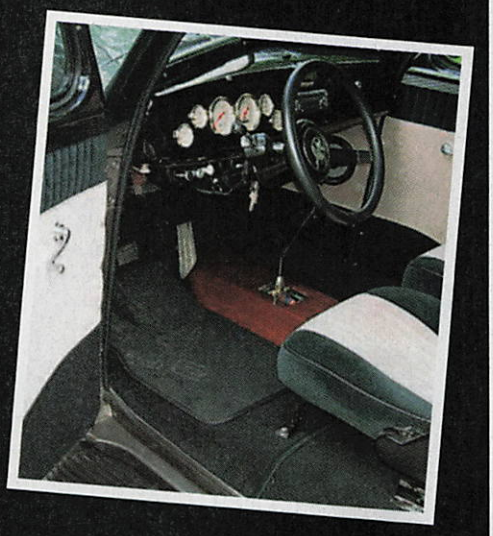
Here's Doug's Model A after four years spent thrashing in his small garage. The car is powered by a small-block Chevy, backed by a five-speed manual, and features white tuck 'n' roll covered by his wife using a Rod Doors kit. The original Model A chassis was boxed and a Martz IFS was installed up front, with a Ford 8-inch rearend out back.





Kerry McFarland's '33 DeSoto sedan was passed down to him by his grandfather when Kerry was only 4 years old. Seventeen years later and Kerry is a budding art student attending Ohio Northern University, and, like all hot rodders, has many a plan for the DeSoto. Kerry and his father, Terry, got the car running in time for this year's Street Rod Nationals, where Terry brought along the family's '34 Chrysler coupe, copiloted by Kerry's grandmother, Mary, who never misses a chance to make a rod run.

Grover Grosse's Nunda, NY-based '39 Dodge coupe was entirely homebuilt using an S-10 chassis, boxed and narrowed 8 inches with a 9-inch rear. A 400ci small-block Chevy was dropped between the S-10 'rails, backed by a TH400 transmission.



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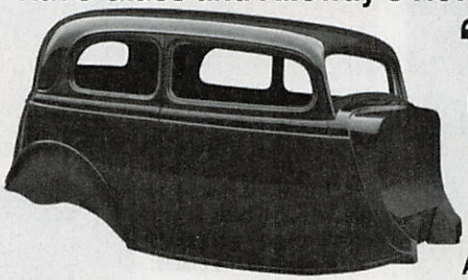

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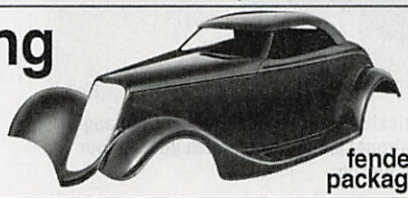

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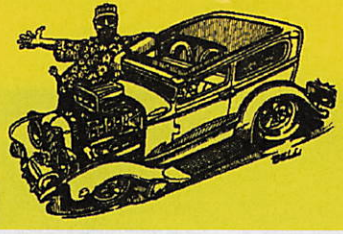

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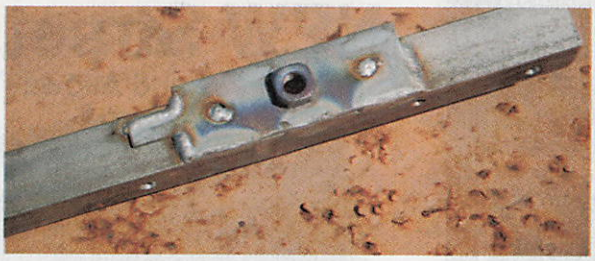
Have you ever made a mistake that turned out to be a good thing? Some time ago, we did a Juliano's shoulder harness installation in our Model A pickup and we fabricated steel reinforcements for the wood latch posts as part of the process. We drilled a hole for the belt's upper mounting bolt to go through, and then proceeded to weld the supplied nut plate on the wrong side of one of the new pieces.

As it often goes with such stories, this one was done over a period of time, so after the welded pieces and tempers had cooled, we did a test-fit and found that the mistakenly positioned mount protruded just enough to fit perfectly because of the curve in the cab's corner upholstery panel. Since the plate was designed to have the nut on the backside for strength, we simply welded the nut to the front side of the plate and did the other side the same way. Unfortunately, we failed to show the proper photo with the nut welded to the plate in the story and the error of our ways was recently brought to our attention.

We apologize for the omission.

We fabricated steel reinforcements from angle iron to strengthen the wood latch posts of our Model A pickup.



The nuts on the shoulder harness mounting plates are swedged in place, but they are designed to be mounted with the nuts on the backside to sandwich the plate for strength.

Although it was done by mistake, the belts fit better this way, so we welded the nuts to the plates.

RARE RAGTOP

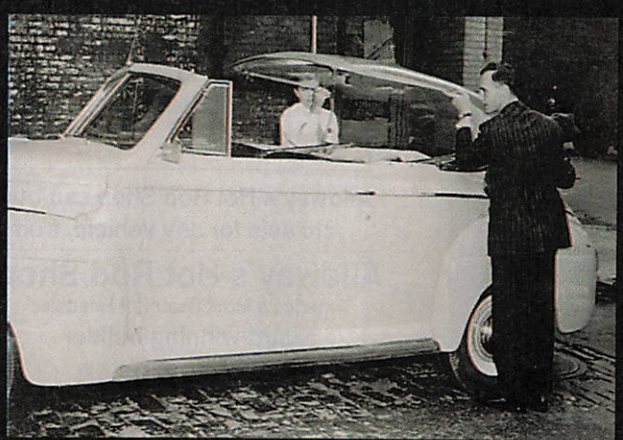
Q. In a recent conversation with an elderly neighbor (who once owned a Ford dealership), he described his brother's '49 Ford convertible as having a liftoff plastic top. I have heard of clear plastic tops that were developed after WWII, but he claims this one was not clear but the same color as the car and had a headliner. He also claims the car still exists, but won't say where. Have you ever heard of such a top?

Name withheld by request

A. *We've seen a '47 Ford convertible with a clear plastic top; the interesting thing about it was the optic quality. Like the airplane canopies that inspired them, there was no distortion, even when looking through the curved portions. But, while they were well executed, they made temperatures inside the car unbearable on a hot day. We're not sure how many were sold.*

As for the top your neighbor describes, our shoebox Ford expert tells us there was such a liftoff plastic top made by the same company that made the clear version, the Cadillac Plastic Company. We've never seen one, but we'd love to see photos if you get the chance to see this one.

We'd also like to hear from anyone who has information about either of these tops.



Inspired by the clear optics of WWII airplanes, clear plastic tops for postwar Ford convertibles were developed. We've seen one in a private collection and can say they are beautifully built; too bad they were so impractical. With today's technology, could there be a clear top that tints automatically the way some glasses do?

MORE ON DECODING CHRYSLERS

We ran a letter from Kyle Smith concerning oversize lifter bores in a Chrysler Hemi in the December '07 issue of SRM. *Although Chrysler dealers and others could, at one time, supply oversize lifters, they're difficult if not impossible to find through normal channels.*

We heard from several readers on the subject, here are a couple of those letters.

CHEVROLET SLEEVES

I love the "Shop Manual" column and the magazine! I read a recent one and noticed two things: As an FYI, looking at the picture of the driveshaft showing correct position of the grease fitting, one of the reasons for positioning it pointing toward the center of the driveshaft is to make it easier to lube (clearance issues) the U-joint. More importantly, Kyle Smith's letter indicated lifter bore issues. I am not sure if this will help or be the right dimensions, but GM Performance Parts sells a Lifter Bore Repair Kit (PN 14044875) that is a lifter bore sleeve. The technical notes in the GMPP catalog are as follows: Drill the defective or damaged lifter bore to 1.044-inch. Shrink the sleeve by cooling it to -40 degrees F and insert it in the lifter bore, making sure the bottom of the sleeve is flush with the camshaft cavity. Drill a 7/16-inch hole through the oil gallery and finish the sleeve id to 0.8432-/0.8442-inch. The sleeve can also be predrilled with a 1/2-inch oil hole before installing in the block. The part number is current and the price is about $4. They can usually be found somewhere in the GM Performance Parts catalog, usually in the small-block section. This may aid in the repair or changing to other lifters. This may also be a way for many to salvage an otherwise good block.

Kirk D. Palis
Chevrolet District Service Manager

STREET RODDING, NASCAR STYLE

In response to Kyle Smith's oversized lifter problem, Precision Products Performance Center (828-684-8569) can manufacture any size lifter needed. The company will have a lapped barrel and mirror-polished foot made of tool steel. Precision Products currently produces lifters for Nextel Cup teams, drag racers, and restoration projects. They do good work.

Jim Presnell
Street Rods by Dave Marcus

We were curious if this was the Dave Marcus of NASCAR fame, so we wrote back and asked. Here's Jim's response:

Yes, it is Dave Marcus of NASCAR fame. Dave, his son-in-law, Sam Beam, and myself are currently building street rods in Dave's old race shop in Arden, North Carolina. Presently we are working on a '34 Chevrolet two-door sedan with an Outlaw 'glass body, full Nextel Cup–type chassis, and SB2 motor. We are also building a '55 Chevrolet two-door post, with a Nextel Cup–type chassis, 572 five-speed, and a fiberglass flip frontend. We have other ongoing projects as well. SR

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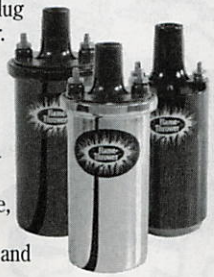

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I'M STARTING TO REMEMBER THINGS AGAIN, DR. GRABOWSKI!
THAT'S GOOD, EDD— BUT, CALL ME, NORMM!
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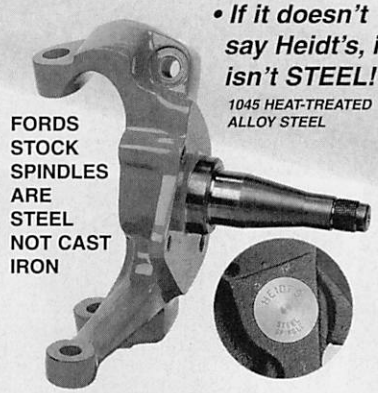

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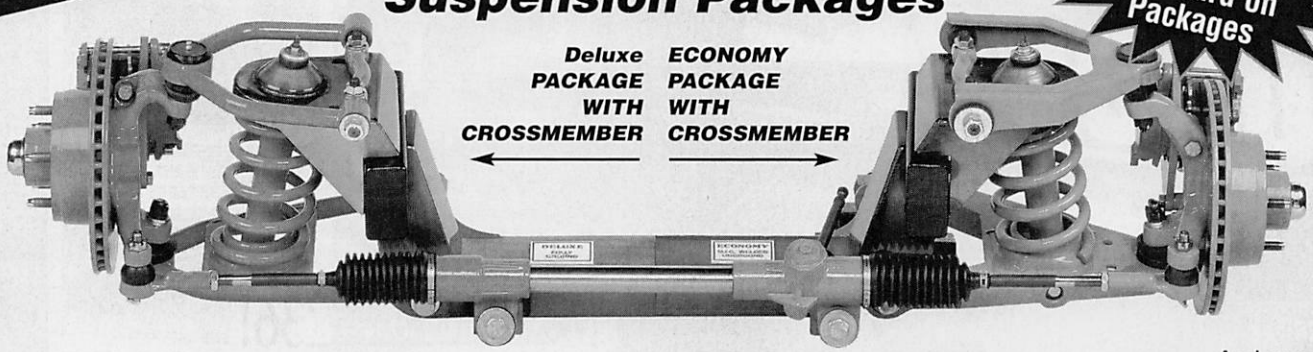

Mustang II Suspension Packages are available in Deluxe and Economy versions, and both are available with or without crossmembers. Deluxe packages include plain tubular upper and lower full A-Arms, while Economy packages include our new formed steel budget upper and lower full A-Arms. All Packages include: 11" five lug rotors, bearings and seals, springs, stock spindles, rebuilt GM calipers with brackets and pads, manual rack and pinion with tie rod ends and bushings, rubber springs cushions, spindle nut kit, and all mounting hardware.

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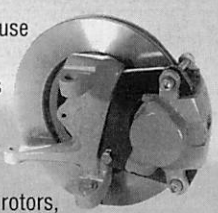

Bracket kits use 11" Ford or Chevy rotors and '78-up GM calipers. Complete kits include: rotors, calipers, bearings, brackets and hardware.

	BRACKET KIT	COMP. KIT
CHEVY	$110	$349
FORD	$99	$329

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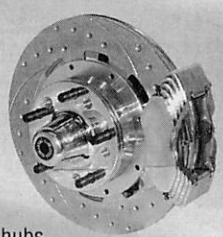

Polished or Black Calipers, slotted and drilled rotors, polished hubs.

Mustang II complete kit outright $1,079

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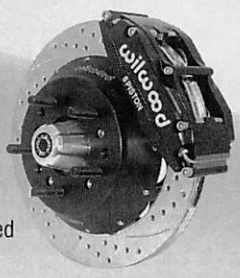
13" Big Brake Kits



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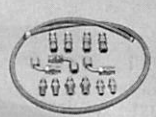

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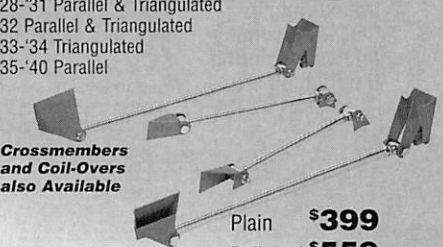

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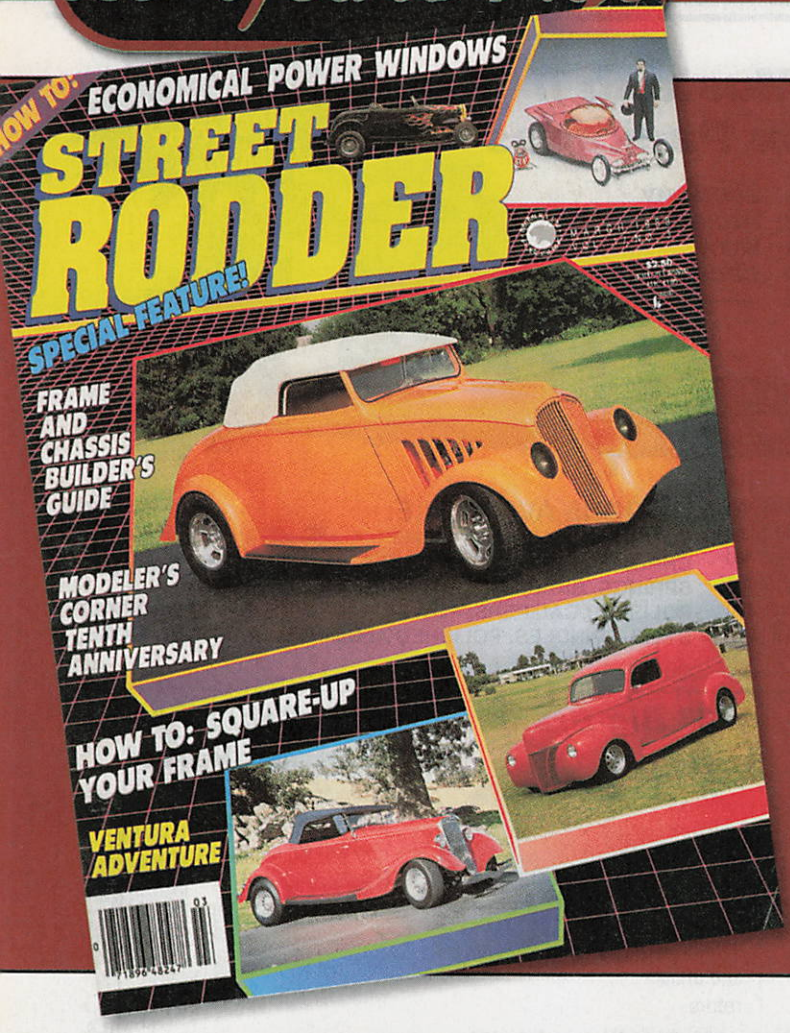

David Malcolm's '36 Chevrolet two-door sedan was actually inherited from his mother, hence the license plate that reads "MOMS 36." After years of yearning, David's mom finally gave in and let him have his way with the car, which he of course turned into a street rod.

It seems odd to think that the nostalgia drag racing scene has been going strong for more than 20 years, but that's indeed what was happening in Bakersfield back in October 1987.

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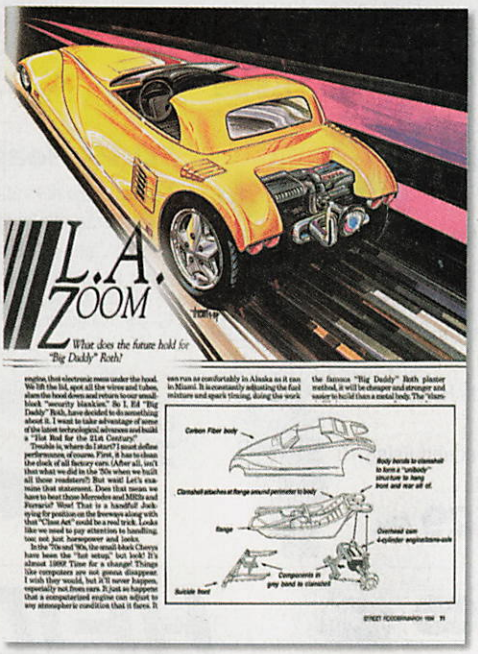
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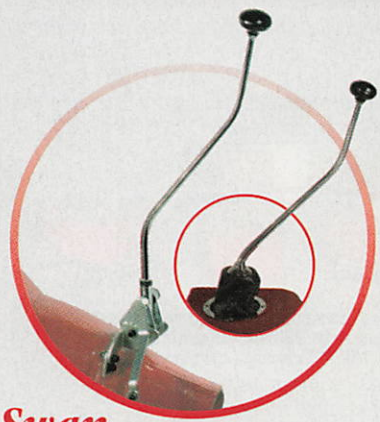

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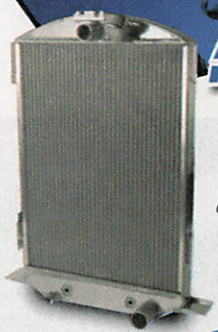

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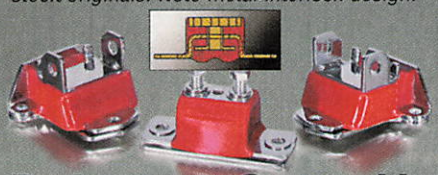

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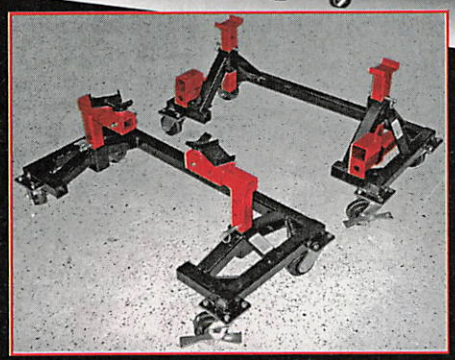

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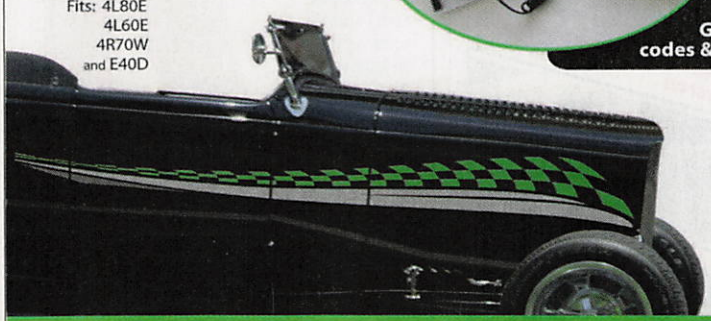

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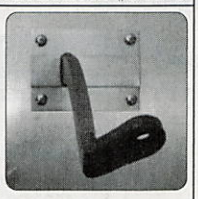

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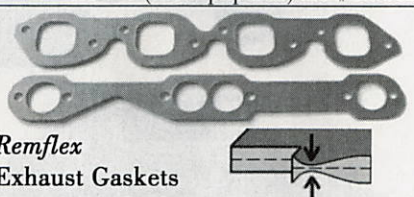

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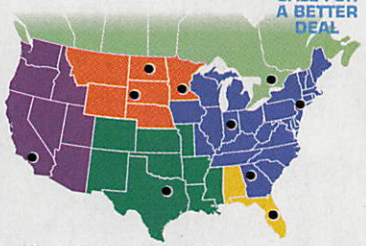

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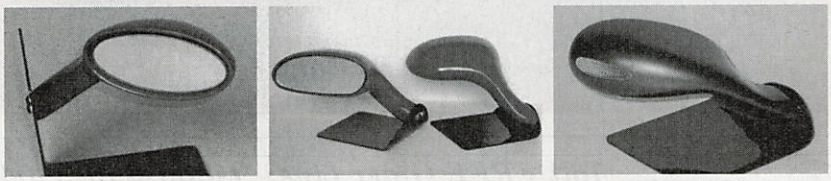

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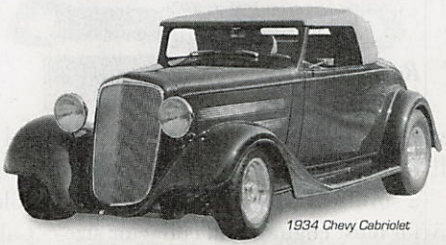
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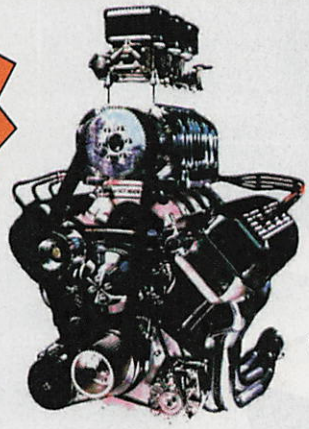

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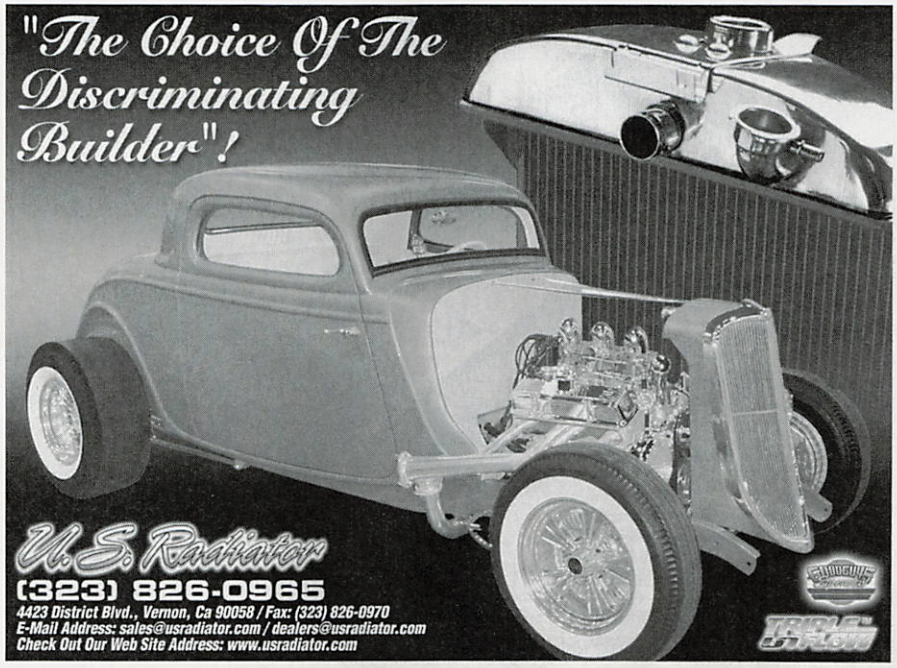

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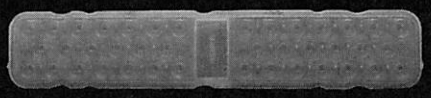
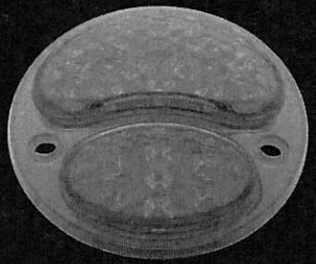
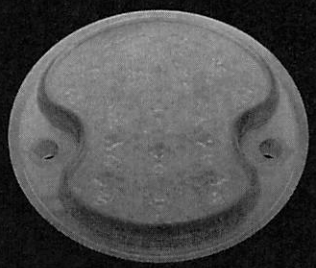


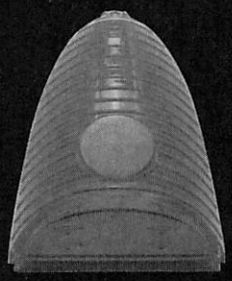
1967 Camaro



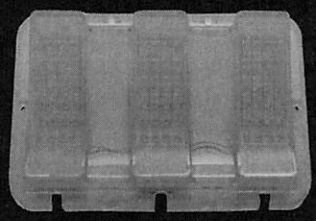
1928-31 Model 'A'



1932 Ford



1955 Chevy



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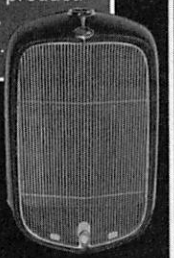

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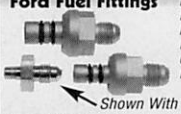

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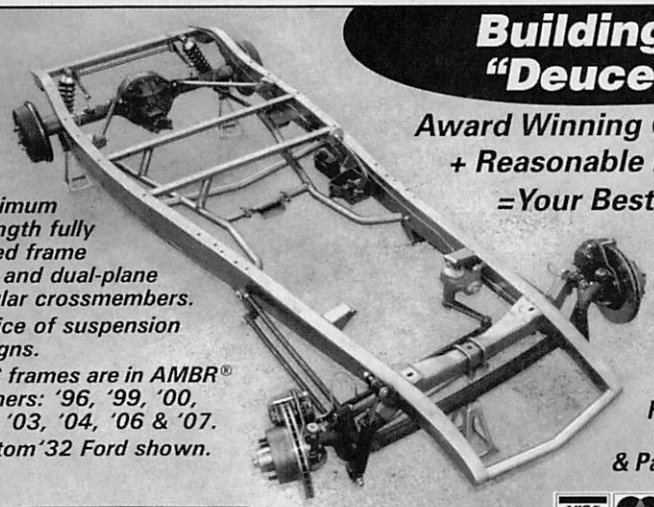

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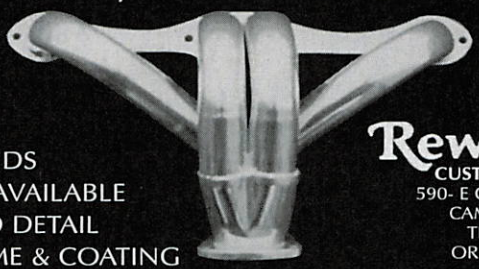

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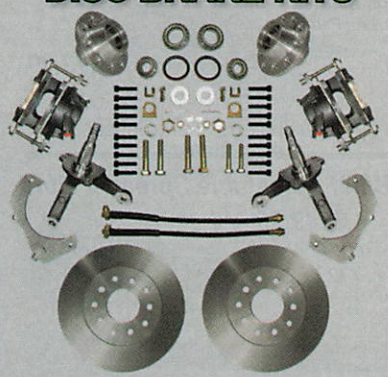

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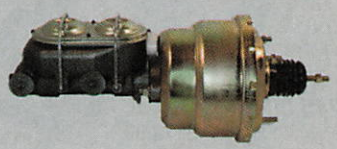

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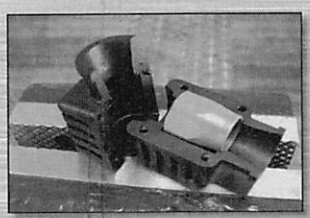

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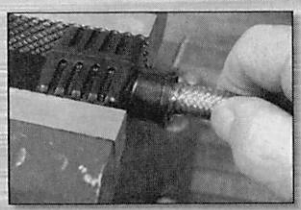

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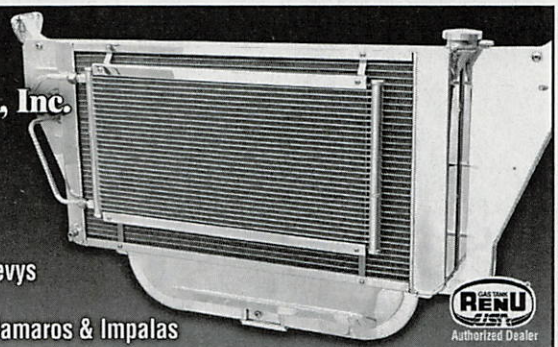

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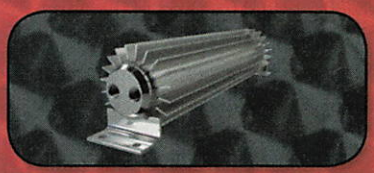

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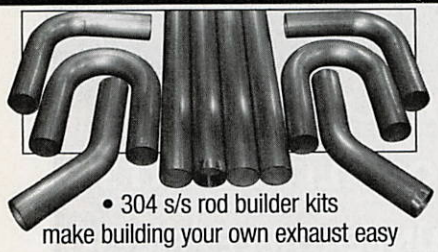

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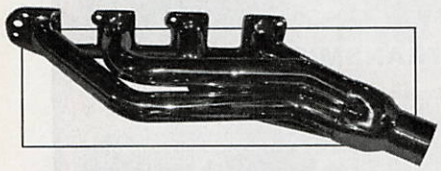

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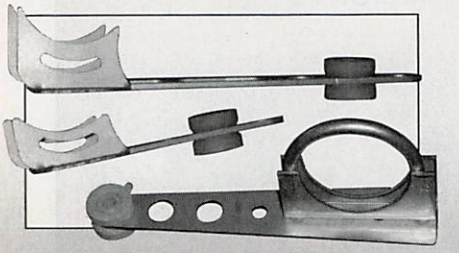

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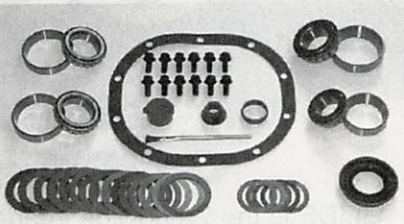

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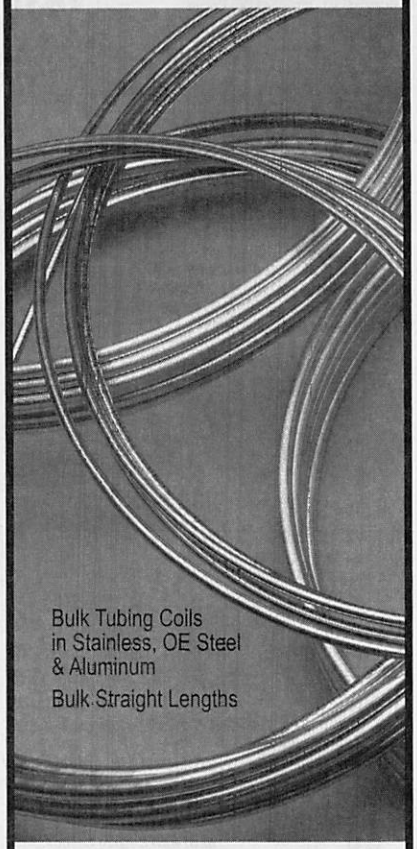

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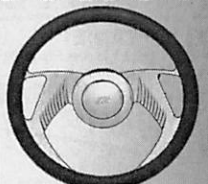

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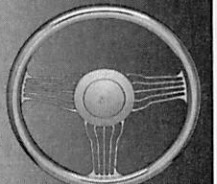

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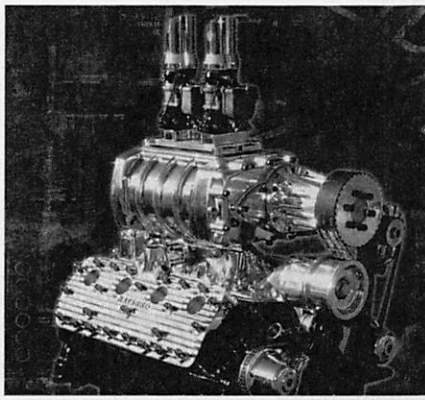

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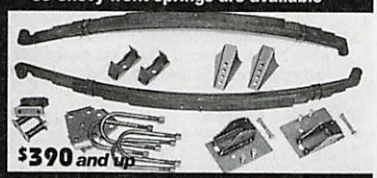

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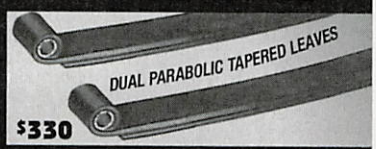

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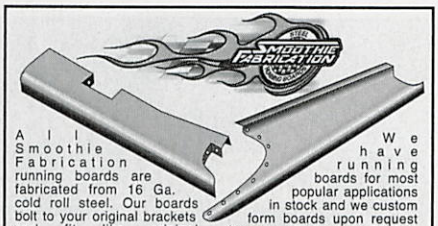

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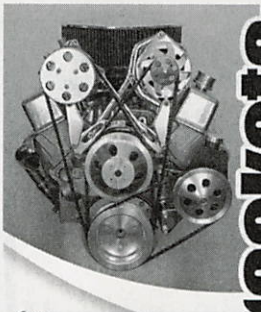

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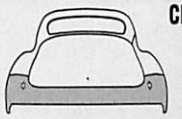

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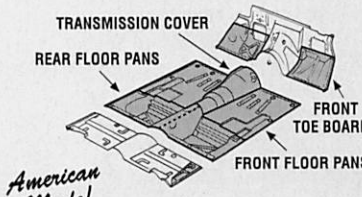

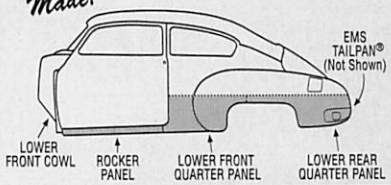

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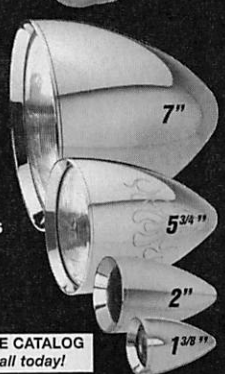

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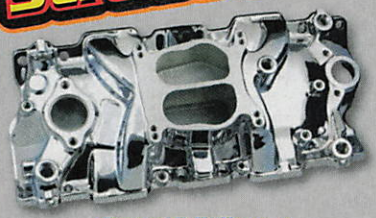

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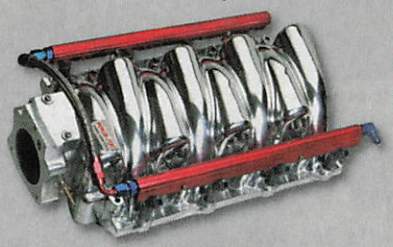

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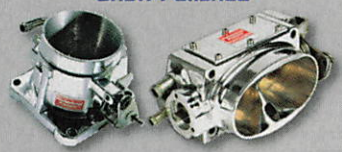

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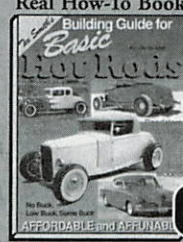
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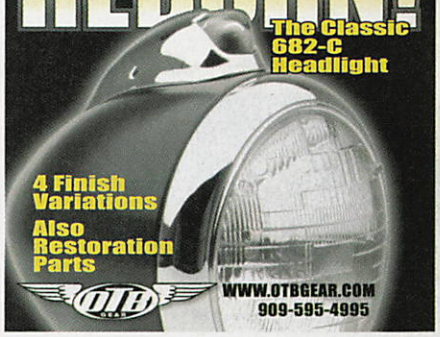
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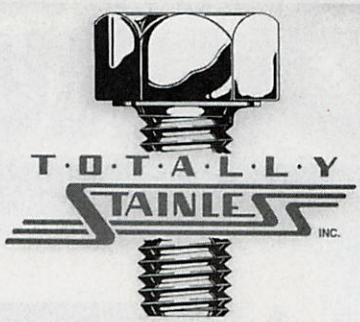

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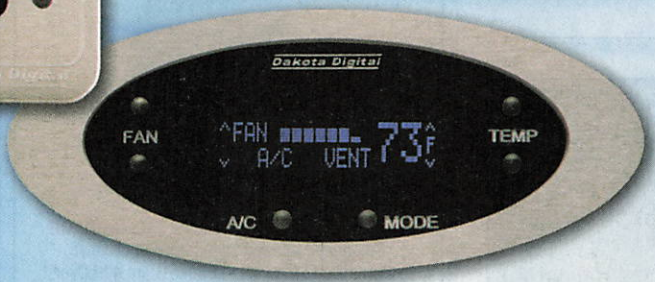

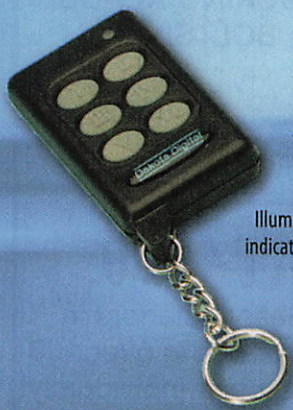

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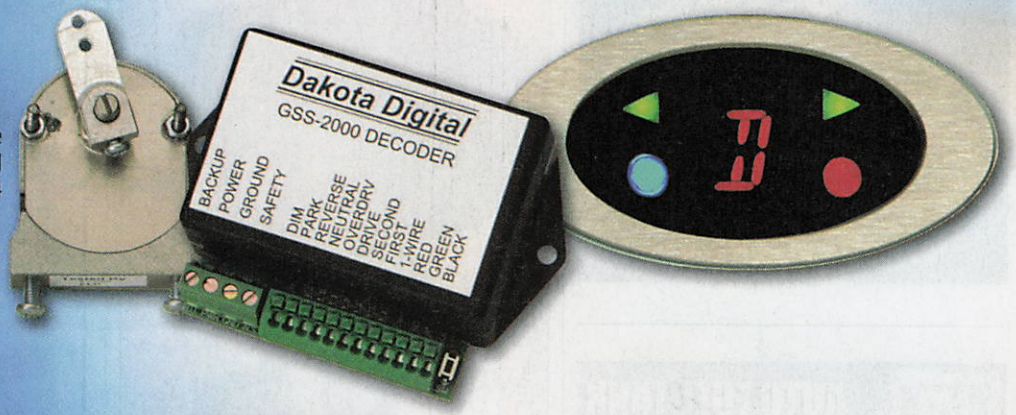

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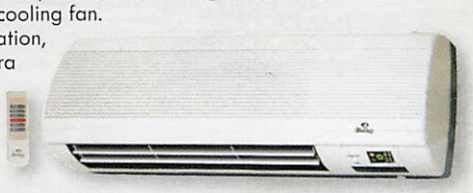

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